DOCUMENT RESUME

ED 424 418 CE 077 393

TITLE	The Employer's Role in Linking School and Work: A Policy Statement by the Research and Policy Committee of the Committee for Economic Development.
INSTITUTION	Committee for Economic Development, New York, NY.
ISBN	ISBN-0-87186-132-1
PUB DATE	1998-00-00
NOTE	80p.; For a related document, see CE 077 392.
AVAILABLE FROM	Committee for Economic Development, 477 Madison Avenue, New York, NY 10022; Tel: 212-688-2063 ($18).
PUB TYPE	Opinion Papers (120)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	Career Education; Economic Change; *Education Work Relationship; Educational Improvement; Educational Needs; *Educational Policy; Employment Qualifications; Experiential Learning; Government Role; Labor Market; Labor Needs; Nonprofit Organizations; *Partnerships in Education; Position Papers; Role of Education; *School Business Relationship; Secondary Education; *Vocational Education; Work Environment; *Work Experience Programs
IDENTIFIERS	*Employer Role

ABSTRACT

This document, which is addressed to employers and others wishing to foster school-to-career programs, reflects the views of the Committee for Economic Development regarding employers' role in linking school and work. The following topics are among those discussed in chapters 1-3: youth and careers (present versus past labor markets, causes of trouble finding jobs, changing skill requirements, challenges for schools and society, costs of the skills gap); learning for the new economy (importance of raising academic achievement; school-to-career as a strategy for motivation and instruction; evidence regarding the effectiveness of programs linking school and work; importance of moving to scale); and employer roles in improving learning (promoting academic achievement through high standards and supportive company practices; advocating school-to-career reforms; providing work experience for students and teachers; facilitating employer participation through intermediaries). Chapter 4 discusses actions that schools and the government can take and makes the following recommendations to employers: support high academic achievement through policy and company practice; join and support intermediary organizations that link employers and schools; and participate in programs that use work experience to promote academic learning and career exploration. Appended are the addresses of 20 school-to-career resource organizations and contains 127 endnotes. (MN)

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A Policy Statement by the Research and Policy Committee of the Committee for Economic Development

CED

The Employer's Role in Linking School and Work

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CED

Library of Congress Cataloging-in-Publication Data

Committee for Economic Development. Research and Policy Committee.
The employer's role in linking school and work / a statement by the Research and Policy Committee of the Committee for Economic Development.
p. cm.
Includes bibliographical references
ISBN 0-87186-132-1
1. Industry and education — United States. 2. School-to-work transition — United States. 3. Career education — United States.
I. Title.
LC1085.2.C65 1998
371. 19' 5' 0973 — dc21 97-51686
CIP

First printing in bound-book form: 1998
Paperback: $18.00
Printed in the United States of America
Design: Rowe & Ballantine

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RESPONSIBILITY FOR CED STATEMENTS ON NATIONAL POLICY

The Committee for Economic Development is an independent research and policy organization of some 250 business leaders and educators. CED is nonprofit, nonpartisan, and nonpolitical. Its purpose is to propose policies that bring about steady economic growth at high employment and reasonably stable prices, increased productivity and living standards, greater and more equal opportunity for every citizen, and an improved quality of life for all.

All CED policy recommendations must have the approval of trustees on the Research and Policy Committee. This committee is directed under the bylaws, which emphasize that "all research is to be thoroughly objective in character, and the approach in each instance is to be from the standpoint of the general welfare and not from that of any special political or economic group." The committee is aided by a Research Advisory Board of leading social scientists and by a small permanent professional staff.

The Research and Policy Committee does not attempt to pass judgment on any pending specific legislative proposals; its purpose is to urge careful consideration of the objectives set forth in this statement and of the best means of accomplishing those objectives.

Each statement is preceded by extensive discussions, meetings, and exchange of memoranda. The research is undertaken by a subcommittee, assisted by advisors chosen for their competence in the field under study.

The full Research and Policy Committee participates in the drafting of recommendations. Likewise, the trustees on the drafting subcommittee vote to approve or disapprove a policy statement, and they share with the Research and Policy Committee the privilege of submitting individual comments for publication.

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*Voted to approve the policy statement but submitted memoranda of comment, reservation, or dissent. See page 54.

Purpose of This Statement

Rapid technological change and globalization have dramatically raised the value of brain relative to brawn in the U.S. labor market. Workers with education beyond high school and with preparation for managerial, professional, or technical jobs will prosper in the new economy, but high school dropouts and many who end their training with high school will fall behind. Unfortunately, nearly half of American youth are in the latter category, often because they fail to see the relevance of traditional classroom education to their economic future.

The national school-to-career movement recently has sought to bridge this gap between learning and work. Employers and schools, assisted by intermediary organizations, are trying to bring greater purposefulness, higher aspirations, and increased motivation to young people, while giving employers new options for meeting their future work force needs. Unlike older forms of vocational education, school-to-career programs have the potential to raise the academic achievement of *all* participating students, which has been an underlying goal of the larger education reform movement for the past fifteen years.

LINKING ACADEMICS AND EXPERIENCE

As an organization of business leaders and educators, CED believes that school reform efforts to raise academic achievement for *all* students can be strengthened through coordination with school-to-career programs. We have developed this policy statement, *The Employer's Role in Linking School and Work*, to guide employers and intermediary groups which wish to foster school-to-career programs in their firms and communities. It provides practical information on ways that different types of employers can participate in these programs, both individually and through intermediary organizations. In addition, this report offers educators and parents a clear rationale for contextual and work-related learning as a means of improving academic achievement and opening up previously unknown career opportunities for young people.

A FOUNDATION OF KNOWLEDGE

The Employer's Role in Linking School and Work is the second product of a major CED program on work and change in the American economy and owes much to more than a decade of CED policy work in education. Please see page 56 for a list of CED policy statements in these areas.

I would like thank the dedicated group of CED Trustees and advisors who served on the subcommittee that prepared this report (see page vii). Very special thanks go to the subcommittee's chairman Frank P. Doyle, Retired Executive Vice President of General Electric, for his wisdom and leadership. We are also indebted to Project Director Richard Kazis, Vice President for Policy at Jobs for the Future, for the knowledge, experience, and clarity he brought to this important issue. Thanks are also due CED Senior Vice President and Director of Research, Van Doorn Ooms, and Robert Fleegler, CED Research Associate, who played a major role in the research and drafting of the policy statement. Additional thanks go to Sandra Kessler Hamburg, Vice President and

Director of Education and Special Projects and Ronald S. Boster, former Vice President and Director of Business and Government Policy.

Finally, we would gratefully acknowledge the important financial and intellectual contributions made by the private and corporate foundations listed on page 56 that have so generously supported this CED project.

Josh S. Weston
Chairman
CED Research and Policy Committee

Introduction and Summary of Recommendations

The dramatic changes sweeping the United States economy have benefited the majority of Americans, but they have left young, less-skilled workers behind. During the past two decades, the real earnings of young men with a high school education or less have fallen significantly, and those of comparable young women have stagnated. Education and skills have become a more stark dividing line between success and failure in the new labor market. Skills that were sufficient to earn a good living 20 years ago are inadequate today.

This problem is among the most pressing facing our society today. Our nation cannot afford to waste the productive potential of its most valuable resource, its young people. Nor can we afford a society sharply divided into "haves" and "have nots" by differences in education and skills. Widening inequality threatens social cohesion and stability. Moreover, the political viability of the market-oriented policies that have helped revitalize the American economy could be compromised by such division.

There are no immediate or simple solutions. In its 1996 policy statement, *American Workers and Economic Change*, CED recommended a combination of policies to promote growth with opportunity for all Americans, but we acknowledged that this would remain a long-term challenge.[1] At the same time, we identified one important element of any solution: improving the marketable skills of young people, particularly those who end their formal education with a high school diploma or less.

We believe that one of the most promising strategies for helping young people improve academic achievement and labor market connections is to strengthen the links between local employers and schools, with the help of intermediary organizations that connect the two. Exciting efforts to do this are taking root in cities and towns across the country, bringing employers and schools into active partnerships to improve both academic achievement and preparation for careers. In this policy statement, we recommend constructive actions for employers—large and small, in the public, private, and non-profit sectors—to strengthen the connections between school and work.

Our primary focus in this statement is high school, although we recognize that high school is already too late for some young people. Difficult family environments and poor preparation in elementary and middle school leave many youths with a weak academic foundation that is hard to overcome. As CED has stressed in previous policy statements, strong parental support and consistently high-quality learning in the early grades are critical to later success in school.[2] *

However, it is in high school that young people make their first important career decisions. And it is in high school that young people's economic and educational choices first become intertwined. Will they complete high school? What will their early work experiences be? How will those experiences shape their career plans? Is their school program rigorous enough to prepare them to pursue their dreams?

*See memorandum by ROBERT B. CATELL, (page 54).

The decisions made for and by high school students have become more critical as long-term economic success has become more closely tied to education and skills. Because of this, we believe that our businesses and communities must collaborate more closely with schools and must do so in new, more active ways. In our view, such collaboration will require creating and strengthening organizations that aggregate employer and school interests and reduce the burdens of collaboration on both.

For most of the 20th century, American high schools have sorted students into the work-bound and the college-bound. Until the 1970s, the social costs of this tracking system were limited. Schools focused attention and resources on those who performed well academically. Employers were generally satisfied with the quality of high school graduates. Most young people who entered the labor market immediately after high school could, within a few years, secure relatively stable employment that eventually paid enough to support a family.

This arrangement no longer works for many young people or for their employers. As a result of new technologies, increased global competition, and other factors, the limited-skill, high-paying jobs that were so important a generation ago have all but vanished. *Today, there is little difference between the skills needed for higher education and those needed for success in the labor market.*

Yet, while labor market realities have changed rapidly, the American educational system has been slow to respond. Our schools continue to provide adequate academic and personal preparation to the college-bound, but they have made little progress in raising achievement for the rest of their students. For those young people, poor educational preparation has become a serious economic disadvantage.

The challenge facing our nation's schools is to extend to all students the quality of academic preparation traditionally provided only to the college-bound. This is no easy task. As one scholar has written:

> Although it is not new to include thinking, problem-solving and reasoning in someone's school curriculum, it is new to include it in everyone's curriculum. . . . It is a new challenge to develop educational programs that assume that all individuals, not just an elite, can become competent thinkers.[3]

The changing economy demands not only solid academic preparation, but also an *expanded* set of skills. In today's workplaces, all but the least-skilled, dead-end jobs require working in groups, communicating with others, solving problems, and facility with basic computer technologies. These skills, too, must become part of the core curriculum for all students.

These new realities demand far-reaching reform of the way the nation's schools, particularly its high schools, are organized for learning. In our view, high schools should incorporate the following:

- A rigorous academic program effectively delivered to all students
- An end to distinctions between the academic preparation needed for college and that needed for employment
- Work as a learning experience for young people
- Classroom curricula and methods related to students' work experience
- Connections among high schools, employers, and postsecondary educational institutions to improve young people's academic and career options

Specifically, we recommend the melding of two promising education reform efforts—the movement for high academic standards and the school-to-career movement—into a single, coordinated strategy. The two complement one another. School-to-career, with its emphasis on contextual, experiential learning and on com-

bining school and work-based learning opportunities, provides young people with motivation and opportunities for developing skills that are both work-related and prerequisites to further education.[4]* The standards movement, built on state systems for setting high academic goals and assessing student and school progress toward those goals, raises expectations and creates new incentives for academic achievement. Each needs the other if it is to reach its full potential.

The school-to-career approach recently has come under sharp attack from a number of observers, including Lynne Cheney, former chairwoman of the National Endowment for the Humanities, and Phyllis Schlafly, chairwoman of the Eagle Forum. They contend that the School to Work Opportunities Act of 1994 is an attempt by the federal government to usurp local control of education and train students for specific occupations, rather than educate them broadly in the liberal arts. They view the school-to-career approach as "a plan to *train* children for specific jobs to serve the work force and the global economy instead of *educate* them so they can make their own life choices."[5]

We believe these criticisms are unjustified. School-to-career initiatives are designed to motivate all students to attain a higher level of academic achievement than was expected of their parents. These programs seek to expand young people's choices, not limit them, by preparing students to succeed both in college and in today's complex workplaces. By combining improved classroom instruction with learning experiences outside school, these programs encourage students to take more demanding math, science, English, and history courses than are found in the traditional curriculum.

Other critics interpret calls for closer connections between school and work as a proposal to "import" European models for preparing young people for work. This is not our goal. Training systems in countries such as Germany, Denmark, and Switzerland are certainly impressive in their scale and quality: a majority of 16-to-19-year-olds in these countries spend most of the work week in structured worksite training, augmented by one or two days of related school studies. In Germany, for example, more than 20 percent of employers participate in the national youth training system, and about 60 percent of young people find careers through its apprenticeships.[6] The professionalism and stability of the institutions that link these nations' education and employment systems are also noteworthy.

The United States is not Europe, however. We cannot and do not wish to replicate the rigidities, early career decisions, centralized labor markets, and heavily subsidized government services of European youth training systems. Moreover, these systems are themselves showing signs of severe stress in the face of global economic forces.[7]

In our view, an American system of effective links between schools and employers should be embedded in the educational system of high schools and postsecondary institutions, rather than in European-style firm-led training programs. High school curricula should include workplace learning experiences in addition to rigorous academic studies, but these should remain more varied and less intensive than in European systems. Work-related learning in America's high schools should concentrate on broadly applicable and increasingly important "soft" skills, such as communication and problem solving, and leave most occupation-specific technical training to postsecondary institutions such as community colleges and proprietary schools. Options for employer participation should also remain more diverse than in European apprenticeship models.

The seeds of a uniquely American system for linking school and work have been planted. Pockets of innovation exist in states and communities around the country. But links between employers and schools are still largely ad hoc, the quality of local programs is uneven, and work opportunities linked to academically rig-

*See memorandum by PETER BENOLIEL, (page 54).

orous school curricula remain the exception. While a number of these early initiatives have shown encouraging results, the ultimate outcomes from such programs at larger scale will be in doubt for some time.

We believe, however, that the potential benefits warrant our efforts, investments, and hopes. Therefore, to advance this important agenda, we urge employers to:

- **Support high academic achievement through policy and company practice**
- **Join and support intermediary organizations that link employers and employer groups with schools**
- **Participate in programs that use work experience to promote academic learning and career exploration**

In this statement, we ask employers to combine state and national policy advocacy with participation as partners with school districts and individual schools. We propose ways for employers to become more involved in the reform of school practice and to align company practices with school reform goals. The result is a blueprint for new, more comprehensive school-business partnerships built around high standards for achievement, engaging instructional methods, exposure to work and to adults, and incentives for students to succeed.

A larger employer role will require commitment not only from employers and their associations, but also from educational institutions and governments. Careful program design will be necessary to ensure that employers are not expected to contribute more than is feasible and that educators and parents do not feel that the social and civic purposes of schooling are being compromised. We believe, however, that the effort is critically important for our youth and our communities. Moreover, we are convinced that significant progress is possible.

We first propose actions by which employers can advance high academic performance and effective labor market connections. We then recommend ways that schools and government can promote effective employer involvement in linking school and work.

ROLES FOR EMPLOYERS

Top Priority: Support High Academic Achievement

Promote rigorous academic content and performance standards.* CED has consistently supported voluntary national standards in a range of academic subjects. Although we recognize the political and technical challenges involved, **we urge employers to support the implementation of voluntary national educational tests, particularly those that assess progress in literacy and numeracy.** At the same time, **we recommend that employers continue to encourage and help states to develop, refine, and implement their own academic performance and content standards.** These standards should encompass other skills needed in the workplace, such as communicating with others, using technology, and working in teams. They should be written to encourage contextual teaching methods and the ability to apply knowledge learned in school.

Change hiring and employment practices to recognize academic achievement. **CED urges employers to link their hiring practices more closely to student performance by using information on student performance in hiring, such as that contained in high school transcripts and teacher recommendations. Legal obstacles to the consideration of student records by employers should be relaxed, while protecting prospective employees from discrimination. We also urge employers to work with schools to make student records more understandable and to develop additional means of documenting student achievement, including certification of skills and portfolios of student work.**

Provide employed students with incentives to work hard in school. **CED recommends that employers voluntarily limit employment of high**

*See memorandum by PETER BENOLIEL. (page 54).

school students during the school year to no more than 20 hours a week. In addition, we recommend that, whenever feasible, employers require working students to maintain school attendance and a minimum grade point average.

Join and Support Intermediaries That Link Employers and Schools

Very few of the more than five million employers in the United States are large enough to have the internal staff resources and scale economies for sustaining effective, ongoing relationships with schools and to provide a wide variety of high quality, educationally relevant part-time jobs. These large firms (as defined by the *Fortune* 1000) employ only about one-fifth of the work force.[8]

Large-scale efforts to connect school and work will therefore require effective and sustainable brokering organizations that simplify employer participation and structure the relationships among schools, employers, and young people. *These intermediaries can increase the critical mass of any effort and are especially important for the small and medium-sized firms that are at the heart of local economic activity and employment.* Such organizations lower the burdens on individual employers and schools of coordination, administration, and supervision, thereby encouraging them to participate. **CED urges employers to become active members of intermediary organizations in their communities. We believe chambers of commerce, trade associations, and other private-sector organizations should support the creation of intermediaries and the expansion of the activities of existing institutions that employers respect and trust.**

Participate In Programs That Promote Learning and Career Exploration

CED enthusiastically supports contextual learning through the integration of academic and applied curricula. A coherent sequence of work experiences related to academic studies should become part of the core curriculum for high school students. To the extent possible, employers should contribute to these efforts in the following ways:

Provide students with quality work experiences related to their academic studies. **CED recommends that employers participate in local initiatives that encourage work-based learning.** Employers should try to offer students high-quality and varied work experiences, ranging from job shadowing to brief rotations through different departments and more intensive internships and employment. To the extent possible, they should match students with mentors and provide regular assessments of their progress.

Enrich the learning content of youth jobs. Traditional youth jobs, such as those in fast-food enterprises, provide the first work experiences for most young people. **CED urges employers in industries that rely on young workers, particularly regional or national chains, to work with schools to enrich the learning content of youth jobs and to integrate work-related lessons into school curricula.**

Provide work experience to teachers and counselors. **CED recommends that employers make available to teachers and other high school staff, particularly during the summer months, a variety of work experiences that can enhance school-to-career programs for their students.** These experiences can usefully be incorporated into school and district professional development initiatives.

Support work-like learning opportunities in settings other than workplaces. **CED recommends that employers support career-related, experiential learning programs in non-workplace settings, including school-based enterprises and related entrepreneurship programs, community service activities linked to school curricula, and career-oriented youth organizations.**

Help schools and teachers use experiential, contextual instructional methods. **CED strongly recommends that employers and their organizations help local school systems introduce more experiential and contextual learning.** One way

to do this is for employers to serve as coaches and judges of student projects, particularly of field studies combining research done inside and outside school that culminate in a formal presentation to students and adults.

THE ROLE OF SCHOOLS

The following strategies can help school systems address the needs of employers and students by accelerating standards-based and school-to-career reforms:

Eliminate lower-track programs. **CED recommends that high schools eliminate rigid distinctions between academic and vocational tracks. They should provide all students with both a rigorous academic foundation and opportunities to apply academic learning in non-school contexts. We also urge high schools to end narrow occupational programs that train students only for low-skill jobs or for employment that no longer reflects labor market requirements.**

Expand public school choice and charter schools. **In the past, CED has urged expansion of public school choice and publicly funded charter schools to increase educational options and create incentives for public schools to improve their performance. We reaffirm this recommendation, noting that school-to-career initiatives can benefit from policies that encourage new, non-traditional schools.**

Provide incentives and support for teachers to learn about modern workplaces and to use contextual instruction. **CED recommends that initial teacher training and in-service professional development place greater emphasis on contextual instruction and work-based learning.** Certification should be awarded for work internships, and teachers should be provided with the time to gain work experience or exposure. **We also recommend more accessible alternative routes to teacher certification, which will allow a more diverse group of individuals to pursue second careers in teaching.**

Hire staff to broker relations with employers. **CED recommends that school systems hire "job developers" or "career coaches" to match students and employers for part-time and summer jobs during high school and for permanent placements after graduation.**

Facilitate the transition from high school to two-year and four-year colleges. **CED strongly encourages high schools and colleges to collaborate in school-to-career programs. Two- and four-year colleges should become members of school reform partnerships and should assess the ways in which their admissions and other policies can encourage more rigorous high school learning. In this context, we urge four-year state colleges and universities to complement traditional course-based admission requirements with other competency-based measures.**

THE ROLE OF GOVERNMENT

Governments at the state, local, and federal levels can provide, in different ways, important support for the start-up, expansion, and institutionalization of employer-school collaborations. Such support is consistent with CED's call for government to promote wider economic opportunity and human capital development. We believe that public activities should include the following:

Support intermediaries that link employers with schools. **These organizations may be developed and funded entirely by employers. However, in many cases public funds may be needed to support such activities, and CED supports such public funding.** State and federal governments should use incentive grants and competitions to stimulate their creation and growth. We do not favor the expansion of tax incentives or wage subsidies to attract employers, believing direct support for intermediaries to be a more effective use of public resources. However, we do recommend careful evaluation of existing state financial incentives to gain a better understanding of their effects.

Incorporate school-to-career principles into mainstream education and workforce development funding. We strongly believe that continued public funding for school-to-career reforms is justi-

fied by a public interest in their benefits for education and workforce preparation. However, we recognize that the School to Work Opportunities Act is likely to sunset, as planned, in 2001. **CED therefore urges states to provide such funding. We also recommend that the federal government incorporate the central features of school-to-career programs into its guidelines for funding mainstream education, training, and youth programs, such as Title I, vocational education, and the Job Training Partnership Act or its successor**. Legislation and regulatory guidelines for programs that combine workplace experiences with classroom studies should emphasize high academic standards, encourage experiential learning, and create strong and stable partnerships among schools, employers, and postsecondary institutions. **We also recommend that governments make it easier to pool resources from different funding sources for initiatives that combine school and work**.

Revise child labor and other laws that discourage work-based learning. **CED recommends that state and federal governments reassess their child labor, workers' compensation, and other workplace-related laws and regulations with the objective of removing unnecessary obstacles to work-based learning for students**. We believe this can be done without compromising young people's health and safety protections or exposing employers to unnecessary risk. Child labor laws should encourage employment related to school learning and discourage excessive hours of work for high school students.

Support evaluations of school-to-career programs. While encouraging evidence on school-to-career initiative is emerging, little is known about the long-term effects on students' education, employment, and incomes of different program models. Even less is known about employers' assessments of program costs and benefits or the effectiveness of local intermediaries. **CED recommends that the Office of Educational Research and Information and other research organizations, in collaboration with national foundations, continue to support research on these questions and disseminate the findings**.

Provide work experience. **We urge our state, local, and federal governments, in their capacity as employers, to provide work experience linked to academic programs for students and teachers.**

Use the bully pulpit. **We also urge the President, governors, and other political leaders to champion the integration of high academic standards and school-to-career learning.**

CONCLUSION

The steadily increasing demand for more and different skills in the labor market is putting productive, well-paying jobs out of the reach of a growing number of our young people. These economic changes make it imperative that we strive for high academic achievement by all students. To this end, school systems, employers and their organizations, and community leaders must join to support a new educational strategy that combines high educational standards and closer connections between schools and employers. The success of this strategy will depend upon the development of effective intermediary organizations to create and nurture these connections. New partnerships in support of this agenda are needed both to help more young people succeed economically and to help employers find and develop a more qualified work force.

Chapter I
Youth and Careers

The new economy—with its greatly increased valuation of education and skills—presents daunting challenges to growing numbers of young Americans. The skill requirements of new jobs are rising steadily, even for many entry-level positions. At the same time, real wages for workers with limited skills have declined during the past quarter century. Without better preparation for the future, as many as one-third to one-half of young people will find themselves unable, even by age 30, to find "good jobs" that pay family-supporting wages.[9]

This stark reality is the backdrop for CED's call for new and more effective linkages between employers and schools. In our 1996 policy statement *American Workers and Economic Change* we warned that the loss to society and the economy from underdeveloped human capital is rising dramatically in the new knowledge-intensive, skill-based economy. We remain especially concerned about the declining opportunities for low-skilled workers, particularly the roughly 40 percent of Americans who have no formal education beyond high school. In our view, reshaping schools and workplaces to prepare all young people for lives of productive employment and continuous learning is one of our society's most pressing responsibilities.

WHAT IS DIFFERENT ABOUT TODAY'S YOUTH LABOR MARKET

Virtually all young people begin their working lives in low-skill and low-paying jobs. Youth jobs are usually part time, often seasonal, and offer limited potential for advancement. They are concentrated in a few industries and occupations, such as eating and drinking establishments, retail sales, and personal services. Young people also change jobs, employers, and industries frequently. Many work while in school, and many alternate periods of education and employment through their twenties. By age 29, the average American worker has held more than seven jobs.[10]

This early experimentation with jobs, sometimes called "churning," is nothing new, and has been relatively stable during the past two decades.[11] While the effects of youthful churning on later adult earning capacity are unclear, for many young workers it serves the very useful purpose of matching individuals with jobs.[12] Young people test their interests against available work opportunities. They learn about varied management styles and work tasks. They develop skills, maturity, job-seeking contacts, and valuable experience.

However, recent changes in both the youth and adult labor markets have made the transition from school into well-paying jobs more difficult for increasing numbers of young people. Traditional routes out of low-wage, low-skill entry-level employment are harder to find.[13] Postsecondary credentials have become a prerequisite for many jobs that high school graduates once filled. Career ladders in many firms and industries have become more truncated and less regular. In the adult labor market, to which youth jobs have been a natural stepping-stone, rates of job loss have increased, even for white-collar jobs that were previously relatively insulated from economic downturns.[14]

. Skills acquired through education increasingly hold the key to higher earnings and career advancement. The most dramatic deterioration in labor market prospects in recent years has been that of high school dropouts. Between 1979 and 1995, the real annual earnings of 25-to-34-year-old male dropouts declined 26 percent, while those of female dropouts of the same age declined 15 percent.[15] In addition, dropouts are the one group for whom labor market churning has increased.[16]

However, dropouts are not alone in encountering serious difficulties in the labor market. In the past two decades the earnings premium for those with a college degree relative to those with a high school diploma or less rose to its highest level since the 1930s.[17] Furthermore, the value of a high school education has fallen in absolute as well as relative terms. Between 1979 and 1995, real average annual earnings of young, male high school graduates working year-round and full-time dropped 18 percent, while the earnings of young male college graduates rose 8 percent.[18]

Although these developments affect all Americans, they have had their most dramatic impact on minority youth, and especially on urban youth, who are disproportionately African-American and Hispanic. Official unemployment rates for African-American and Hispanic youths run two to three times those of white youths. Furthermore, many minority youths are simply dropping out of the labor market because of their poor earnings prospects. The labor force participation rate for 20-to-24 year-old black men fell from 81 percent in 1979 to 72 percent in 1997.[19]

WHY YOUNG PEOPLE ARE HAVING MORE TROUBLE FINDING GOOD JOBS

On balance, America's relatively flexible labor and capital markets serve workers well, particularly those qualified for technical, professional, and managerial occupations. However, some of the very factors that have sparked economic progress in recent years—rapid technical change, information-driven work processes, economic deregulation, and global integration—have also contributed to the collapse of wages in low-skill jobs.

A dramatic shift of employment out of relatively low-skill industries and occupations that paid well is one factor making it much harder for less-educated youths to succeed. Manufacturing is the most prominent example. Between 1981 and 1997, the proportion of payroll employees working in manufacturing fell from 23 percent to 15 percent. A similar, though less steep, decline occurred in transportation, utilities, and other relatively high-wage/low-skill industries. The service sector has accounted for most of the growth in employment and has been a boon to the economy overall. However, although some service occupations that pay above-average wages have grown very rapidly, the largest numerical increase has been in low-wage service jobs.[20]

The weakening of some traditional wage-setting institutions, while increasing firms' adaptability and economic efficiency, also has contributed to shrinking real wages in low-skill jobs. The steady drop in union representation has restrained compensation in industries where unions once had a major wage-setting role.[21] In addition, the real value of the federal minimum wage has declined steadily: even after increases enacted in 1996, the real value of the minimum wage is 17 percent lower than in 1979. Finally, government deregulation of traditionally high-paying industries, such as airlines, bus transportation, trucking, and telecommunications, has promoted competition and restrained wages in those industries.

The earnings of low-skilled workers have also been affected by the globalization of labor and product markets. Both trade with low-wage economies and immigration have increased the effective supply of low-skilled workers in the United States. The demand for low-skilled workers has not kept pace with supply, and their wages have fallen. Immigration and trade together appear to be responsible for almost half the decline in the relative wages of U.S. high school dropouts over the past two decades.[22]

HOW EMPLOYER SKILL REQUIREMENTS ARE CHANGING

More and more businesses seek workers who have mastered what researchers Richard Murnane and Frank Levy have called the "new basic skills."[23] In addition to those qualities employers have traditionally sought, such as reliability, a positive attitude, and a willingness to work hard, employers now look for "hard" and "soft" skills that applicants would not have needed 20 years ago. These skills include:

- The ability to read and to do math at the ninth-grade level or higher
- The ability to solve semi-structured problems for which hypotheses must be formed and tested
- The ability to work in groups with people of varied backgrounds
- The ability to communicate effectively, both orally and in writing
- The ability to use personal computers for at least elementary tasks, such as basic word processing

Just how quickly skill demands are increasing has been the subject of much debate. Estimates differ sharply regarding the pace at which firms are moving from old, low-skill forms of work organization to a "high-performance" organization requiring from workers more teamwork, greater communications skills, and complex problem solving and decision making.[24]

As major employers, we have no doubt that the rising demand for skills is real—and that it will increase in the coming years. Recent research supports our experience. A 1992 national survey reported the introduction of high-performance practices in as many as 35 percent of surveyed firms. A 1997 repeat of that survey found substantial increases in the ensuing five years.[25]

In our businesses, we have observed first hand the "two-pronged" increase in the demand for skills that Murnane and Levy identified through interviews with leading U.S. firms. The first prong is a shift toward hiring college graduates rather than high school graduates. Employers are seeking relatively more workers with *college*-level skills. Many are also using college diplomas as a screen for *high school*-level skills because they lack confidence in the quality represented by the typical high school diploma.

The second prong is a demand for more, and more varied, cognitive and interactive skills from *all* workers, including those in entry-level jobs. Murnane and Levy compare the "warm body" hiring practices used by the Big Three automakers into the 1970s, in which they hired almost any applicant who appeared physically fit, with the demanding interviews and tests used today by Diamond-Star Motors, the Mitsubishi-Chrysler joint venture. Diamond-Star assesses applicants for production and maintenance jobs for their ability to read and perform math at a "high school level," to solve semi-structured problems, to originate improvements, to work in teams and communicate orally, and to handle inspection and quality control.

Diamond-Star is not an anomaly in the American economy. Brawn is rarely a sufficient qualification for *any* employment, let alone a well-paid position. A recent survey of more than 3,000 employers in metropolitan Boston, Atlanta, Los Angeles, and Detroit concluded that "the vast majority of jobs for non-college graduates require daily use of at least some major cognitive skills, such as reading/writing paragraphs, doing arithmetic, or using computers."[26] Only 5 to 10 percent of jobs for non-college graduates in these four cities did not require either cognitive skills or work credentials.[27]

The "hurdle bar" for success is rising. In a 1995 survey of employers conducted by the National Center for the Educational Quality of the Workforce, 56 percent of employers reported that the skill requirements for their jobs were increasing; only 5 percent said they were decreasing.[28] Trends are similar in entry-

DEFINING THE ENTRY-LEVEL SKILLS EMPLOYERS VALUE MOST

In 1991, the Secretary (of Labor's) Commission on Achieving Necessary Skills (SCANS), a blue-ribbon group representing business, labor, education, and government, issued the landmark study, What *Work Requires of Schools.** In it, the commission specified a set of skills and competencies that modern workplaces demand from all workers. The SCANS report has become a widely accepted benchmark for employer expectations of its entry-level workforce.

The report organized "workplace know-how" into five competencies and a three-part foundation of skills and qualities needed for solid job performance. The foundation included *basic skills* in reading, writing, mathematics, speaking, and listening; *thinking skills*, such as problem solving, decision making, and knowing how to learn; and *personal qualities*, such as responsibility, self-esteem, and integrity. The five competencies emphasized the ability to collect, analyze, and organize information; identify and use resources; work with others; use technology; and understand and design systems.

In 1993, a coalition of local community and business organizations in Kalamazoo, Michigan, undertook to identify the workplace skills expected by its local employers. Through focus groups with over 100 employers in a range of manufacturing and service industries, the Kalamazoo County Education for Employment Outcomes Task Force identified 23 skills and characteristics that map the SCANS skills. These included:**

- Basic academic skills;
- Personal characteristics (honesty, integrity, willingness to learn, and motivation);
- Task achievement competencies (punctuality, problem solving, time management, and attention to quality);
- Behaviors with respect to organization (e.g., understands and embraces mission, understands "big picture," takes ownership in job, feels responsible for organization's success); and
- Interpersonal skills (teamwork skills, customer orientation, and respect for diversity).

* The Secretary's Commission on Achieving Necessary Skills, U.S. Department of Labor. *What Work Requires of Schools, A SCANS Report for America 2000.* (Washington DC: U.S. Department of Labor, 1991).

** Kevin Hollenbeck, *The Workplace Know-How Skills Needed to be Productive.* (Kalamazoo: W.E. Upjohn Institute, 1994), p. 29.

level employment. In a study of Los Angeles and Detroit metropolitan-area employers, more than 60 percent of managers reported increases in skill requirements for entry-level jobs.[29] The above box illustrates the skills that business is demanding.

THE CHALLENGE FOR SCHOOLS AND SOCIETY

Employers have argued for some years that America's public schools do not adequately prepare the average high school student for today's and tomorrow's workplaces. CED commissioned a Louis Harris poll in 1991 to ask parents, students, and employers whether high school graduates were well-prepared in reading, writing, and math. The differences in response were dramatic: 71 percent of parents and 63 percent of students said yes—but only 21 percent of employers agreed. [30] Four years later, only 4 percent of business leaders said public schools do a good job of preparing young people for the world of work, compared with 44 percent of high school teachers and 68 percent of school superintendents.[31]

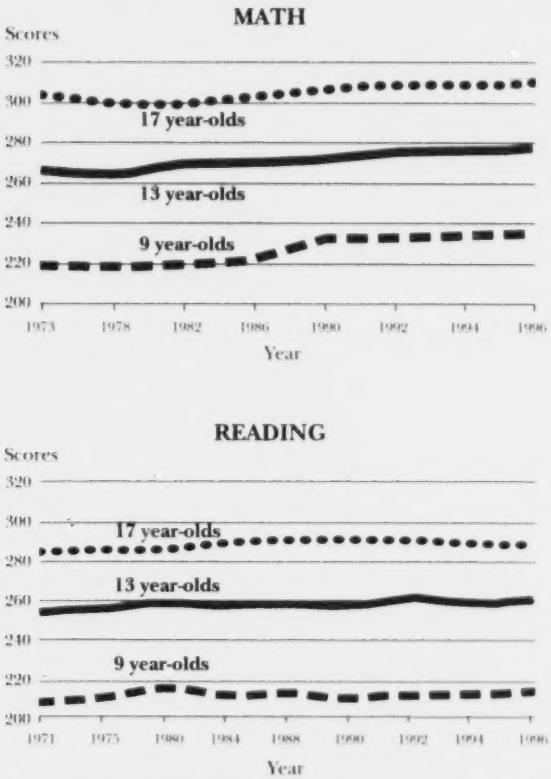
Data from the National Assessment of Educational Progress (NAEP) support these em-

ployer concerns. According to NAEP, fewer than half the nation's eleventh and twelfth graders read and write "proficiently"; four of ten 17-year-olds have not mastered such basic high school math skills as computing with fractions or decimals and solving simple equations. More important, the tests reveal that although most students succeed in learning lower-level rote skills, such as performing simple arithmetic computation and recalling facts in science, many fewer can solve problems that require several steps and have no obvious or immediate answers. The former head of the Educational Testing Service, Gregory Anrig, noted that 20 years of NAEP tests have "documented a critical shortage of effective reasoning skills among our young people."[32]

Figure 1

Educational Achievement in Math and Reading Has Barely Improved Over the Past Generation

National Assessment of Educational Progress (NAEP) Scores, 1971-1996



SOURCE: J.R. Campbell, K. Voelkl, P.L. Donahue, Report in Brief, NAEP 1996 Trends in Academic Progress (Washington, D.C. National Center for Education Statistics, 1997), p. 5-6.

The problem is not that the education of most young Americans is inferior to that of their parents. Educational *attainment* in the United States—the average number of years of school completed—has risen significantly during the past 20 years. Over the same period, educational *achievement*—the quality of student learning as measured by independent testing—has risen slightly. (See Figure 1). However, very slow improvement in student achievement is not enough. To match the continuing increases in the skill requirements of the workplace, significant improvements in young people's mastery of academic and other skills will be required.

THE COSTS OF THE SKILLS GAP

The costs of the gap between the skills needed for economic success and those of today's youth burden not only those young people, but also employers, consumers, and taxpayers.

Youths who do not learn the "new basic skills" and cannot compete successfully even in the entry-level labor market are very likely as adults to work less than they would like, at lower wages, with few or no fringe benefits, and with little job stability. Overrepresented in jobs that provide minimal training and few structured opportunities for advancement, their productive capacity goes underdeveloped and their future prospects are dim. The lost income of non-working high school dropouts may be as much as $177 billion each year.[33]

Immediate costs to employers, the bulk of which are ultimately passed on to consumers and workers, show up in remedial training and excess turnover in entry-level jobs, as well as in

less-visible expenditures, such as the need for more supervision and more intensive screening of new employees. According to a 1995 survey in *Training* magazine, the proportion of American businesses providing remedial basic education for employees rose from 18 percent in 1984 to 43 percent just 11 years later.[34] A significant amount of such activity could be avoided if schools did a better job.

High turnover due to poor matches between job requirements and the skills and attitudes of new hires imposes additional costs. Recruitment, testing, and screening, as well as fees paid to temporary firms for suitable applicants, all affect the bottom line. The Marriott Corporation estimates that entry-level turnover costs it $1,100 a year in recruitment, hiring, and orientation for each entry-level job.[35] McDonald's puts its annual turnover cost per employee at about $700. According to Merck & Co., Inc., it costs about 1.5 times annual salary to replace a manager and about 75 percent of salary to replace a technical or clerical employee.[36] These costs are especially heavy in low-wage industries like retail trade, food service, and hospitality, where annual labor turnover can reach 300-400 percent.

To compensate for the difficulty they face finding workers with the skills they want, firms frequently change work organization, revise company procedures, or hire additional supervisory staff. According to John Tobin, the Director of Vocational Education for Siemens Corporation, his company could reduce costs for trainers, mentors, managers, and supervisors if front-line workers were better prepared to take on more complex work responsibilities.[37]

Taxpayers ultimately foot part of the bill for inadequate education and its consequences. Taxpayers contribute twice to the education of many young people—once for an inadequate high school experience and again for remedial courses in college. Estimates of $1 billion a year for remediation by public colleges and universities are considered conservative.[38] Taxpayers also pay the costs of public assistance and crime related in some degree to the fact that many young people have become effectively unemployable or alienated from the world of work when they reach working age.[39] These problems are particularly acute among youths who have dropped out of high school. We recognize that the obstacles to effective learning for this population often stem from family and cultural factors that transcend the educational and economic issues addressed in this statement. Nevertheless, the advantages of school-to-career programs in motivating learning through concrete, work-related experiences and through mentoring are particularly relevant to many of these young people. (See box, page 14: "Linking Academic Achievement and Work for Out-of-School Youths")

LINKING ACADEMIC ACHIEVEMENT AND WORK FOR OUT-OF-SCHOOL YOUTHS

Out-of-school youths have been generally ill-served by public education, training, and employment programs. The "second-chance" system for out-of-school populations is essentially a "second-class" system, dominated by short-duration programs that at best have short-duration impacts.[40] Given the multiple barriers that separate these young people from both school and work, it is not surprising that short-duration programs have proven inadequate.

Improvements in earning and learning for out-of-school youths require unique and flexible institutions. Academic instruction must be provided in venues that are accessible and without stigma, such as community colleges, alternative diploma programs, and other community settings. Case management support is typically needed while young people with little labor market experience or success search for, and become acclimated to, work. Out-of-school youths also tend to need some assurance of future paid work while enrolled in learning programs.

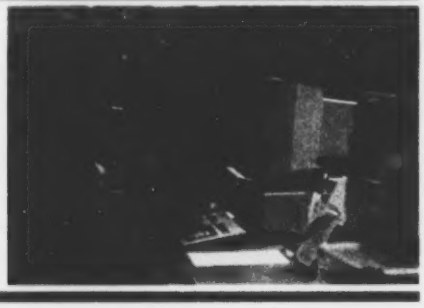
Nonetheless, the principles that inform "best-practice" efforts linking typical schools and employers also guide some of the most successful programs for out-of-school youths. These include the residential Job Corps, alternative diploma programs, and work-and-learning models such as the Center for Employment and Training and YouthBuild.[41] These principles include:

- Centrality of work-based learning
- Pedagogy that is active and experiential
- Emphasis on youth development, responsibility, and empowerment
- Strong relationships with adults and peers
- Support that is consistent over time
- Standards for accomplishment that are rigorous and respected by both postsecondary institutions and employers.

CONCLUSION

As the demands of the new economy raise the hurdle for economic success for our young people, they also raise the standard for acceptable performance by our schools. A high school diploma based on a watered-down curriculum is no longer adequate. In the future, all students leaving school will need to be adequately prepared to make informed choices between employment and further education—and to succeed at either. Raising educational standards—and meeting them—will require new partnerships among schools, employers and other community stakeholders, new teaching pedagogies, and new incentives for helping young people link school and work effectively.

Chapter II
Learning For The New Economy



As employers who have restructured industries and firms, we know that major changes in schools to meet the challenges described in Chapter I will not be easy. Significant improvements in school performance will require support and pressure from outside the educational system as well as strong leadership from within.

Schools are complex institutions, difficult to change and, like many organizations, often resistant to it. Conflicting mandates, guidelines, incentives, and sanctions encourage a "protective confusion" that reinforces conventional practice.[42] Many teachers and administrators are skeptical of reform initiatives, having seen many come and go, typically with little long-term impact. School personnel who support reform often are unable to change a school's organization or curriculum. This is especially true of high schools, which are hemmed in by state and local requirements for graduation, rigid schedules, isolated and inexperienced teachers, and the conflicting priorities of multiple stakeholders. In many low-income communities, inadequate resources for professional development, materials, and technology compound these problems.

CED's proposed strategy for achieving needed change is to strengthen and integrate two education reform movements that have separately taken root in recent years. The first is the *academic standards movement*, which has made strides in building public consensus on what young people should know when they graduate from high school and in urging schools to make it happen. The second, the *school-to-career (or school-to-work) movement*, has engaged employers and schools in changing both classroom instruction and the connection of students to the labor market.*

THE FIRST PRIORITY: RAISING ACADEMIC ACHIEVEMENT

We noted in our 1994 policy statement, *Putting Learning First*, that our nation had lost its sense of priorities in public education—that our schools must return to their fundamental mission of raising academic achievement. Our view has not changed. But raising academic achievement has proven exceedingly difficult. Student achievement as measured by standardized tests has risen only slightly during the last three decades, even though real per-pupil spending has more than tripled and public school student-teacher ratios have fallen by one-third.[43]

In the 1980s, the nation turned its attention to the need for reform in K-12 public education. In 1983, *A Nation at Risk* focused emerging public and business attention on the inadequate academic preparation in high schools. In the ten years that followed, 44 states implemented the report's recommendations and strengthened minimum course requirements for graduation. The proportion of students taking four years of English and three years each of mathematics, science, and social studies rose from 12 percent for the class of 1982 to almost half of the class of 1992.[44]

*See memorandum by JOHN DIEBOLD, (page 54).

While this curricular reform achieved many of its specific targets, the impact on student achievement was disappointing. Increased enrollment in academic core subjects too often reflected little more than a renaming of undemanding courses. Educational inputs such as courses taken and hours of instruction were raised, but improved outcomes did not automatically follow.

In the late 1980s, top-down reform strategies based on strengthening state education regulations were augmented by increased attention to school-level issues such as school "climate," decision-making autonomy, and professional development. Proponents argued that decentralizing authority and making individual schools and their staffs accountable would accelerate academic improvement.

Today, a third wave of standards-based reform is under way that combines the most promising aspects of these two earlier strategies. This approach combines state coordination, standard setting, and accountability with local flexibility in organizing learning to raise achievement. In this model, states have responsibility for crafting a public consensus on what students should know and be able to do upon graduation, with standards defined in terms of competencies needed for success rather than course requirements. States also design and implement long-range instructional goals, materials development, professional training, and the assessment of school and student outcomes. Individual schools are encouraged to focus on the heart of the learning enterprise: instructional content and pedagogy. Schools can organize instruction as they choose, but they are responsible for meeting high state standards for academic achievement.[45]

The standards movement has gathered remarkable momentum since the 1989 Charlottesville Education Summit, when the nation's governors and President George Bush agreed to national goals that included "demonstrated competency in challenging subject matter."[46] Almost all states have launched efforts to define what schools should teach and how outcomes should be measured. (See box, page 17: "Kentucky's Ambitious Approach to Raising Academic Standards") The federal government has accelerated this activity through state and local grants under the Goals 2000 legislation. By January 1997, 47 states had developed or were in the process of developing content standards in English, math, science, and history.[47]

While this progress is promising, much remains to be done before state academic standards will have a significant impact. Teachers must be able to understand the new standards and be prepared to teach to them. The quality and rigor of most states' standards are still untested. Development of assessments to measure student progress has lagged, leaving most states unprepared to hold either schools or students accountable for meeting new standards.[48]

However, the emerging consensus among educators, the public, business leaders, and policymakers on the need for rigorous academic standards and accountability is encouraging. As the American Federation of Teachers has put it, "Just as businesses can't measure improvements in production without knowing what they want their products to look like, schools can't change without first determining what they want children to learn."[49]

MOTIVATION AND INSTRUCTION: THE KEYS TO ACHIEVEMENT

High standards are essential, but no guarantee of learning. Students must be motivated to learn, and new instructional strategies are required to reach those young people for whom abstract, passive learning is relatively ineffective. We believe that school-to-career practices can address both these challenges.

Motivation: The sad reality today is that, except for those competing for entry into the best colleges and universities, many high school students lack the motivation to learn. In a 1994

KENTUCKY'S AMBITIOUS APPROACH TO RAISING ACADEMIC STANDARDS

In 1990, after the Kentucky Supreme Court declared the state's education system unconstitutional because of gross funding disparities among districts, Kentucky began an ambitious statewide reform effort that focused on raising academic standards. The Kentucky Education Reform Act (KERA) enacted several radical changes: funding equalization, increased school-based management through parent-teacher councils, curricular reforms stressing high academic standards, and an accountability system that rewards and penalizes schools on the basis of student performance on annual statewide tests.

The Kentucky business community, led by Louisville-area firms such as Humana, Ashland, and United Parcel Service, played a leading role in the evolution and passage of KERA. In 1991, they formed the Partnership for Kentucky School Reform to promote and sustain public support.

Early results are instructive. Achievement scores on state assessments have improved, with the largest gains among fourth graders. Kentucky has moved from the bottom into the "middle of the pack" among states.[50] Improvements in middle and high school scores have proven harder to achieve. Across the grades, the greatest improvements are still at the lower rungs of proficiency."[51]

The situation in Louisville, Kentucky's largest city, illustrates the challenges and opportunities presented by KERA. Some Jefferson County middle and high schools are among the lowest performers in the state, and the penetration of KERA standards into everyday teaching has been slowed by inadequate professional development and limited state guidance. Yet, two middle schools that have made a school-wide commitment to setting higher standards and changing school practices to help students meet the standards have bucked the local trend and have edged into the "successful" category in the state assessment.[52] The school system is looking to professional development, expansion of work-based learning, and other strategies to help middle and high school teachers and students raise achievement levels. (For a profile of employer involvement in Jefferson County's school reform and school-to-career efforts, see the volume of case studies published separately by CED.)

national survey of more than 20,000 high school students from all backgrounds, nearly 40 percent admitted they were "just going through the motions" in school. The study concluded that student commitment to school is at an all-time low in both urban and suburban settings.[53*]

If students *could* learn more in school, why don't they? Why is their commitment so weak? Unfortunately, students are to some degree responding rationally to society's signals about the limited value of achieving in school. In numerous surveys, high school students have expressed their belief that their future success in the job market depends only on *whether* they graduate, not on their grades or what they learn.[54] This lesson is reinforced in school and in the labor market. In school, the achievement demanded of most students is modest, and no significant consequences result from failing to meet even those limited expectations. In the labor market, hiring for youth jobs does not depend upon academic achievement. Students see few signs that doing well in school improves their prospects for employment or higher earnings in their first jobs.[55]

Of course, young people's economic perspectives are limited by short time horizons. Working hard today for a payoff tomorrow is often far less compelling than the immediate rewards of social and extracurricular activities. In this context, class time is seen less as time

*See memorandum by PETER BENOLIEL, (page 54).

for learning than as "the price [students] pay to join their peers in the hallways, lunchrooms, and practice fields, and eventually to reach the ritual of graduation."[56]

Moreover, the incentive and reward structures of the typical large high school impart values that are inimical to success in today's world of work.[57] Many high school students learn from daily school experience: that just showing up, avoiding negative behavior, and working only a few minutes an hour are acceptable; that advance preparation for work is rarely necessary; that excuses remove the consequences of failure; that relations with authority concern winning and losing, rather than working together productively; and that anything that goes wrong is the responsibility of someone further up the hierarchy. These lessons are no preparation for the initiative, self-motivation, and autonomy required for successful careers.

Instruction: Cognitive scientists recently have discovered much about how people learn. In education, this new knowledge is being used to improve instruction. One important finding is that the passive, fragmented, and abstract learning common in high schools impedes mastery of material and its application in non-school settings for many students. Applied, experiential learning that enables students to learn complex concepts through real-world problem solving and to use what they learn in real-world contexts is often more effective.

Passive learning undercuts the development of higher-order cognitive skills that govern problem solving. Instruction without context works against the natural drive to make sense of the world. It also limits the transfer of learning from schools to settings where people work and live.[58]

Increasingly, success at work requires rapid and creative responses to unexpected situations, particularly those in which normal routines break down. School-learned strategies for solving problems are often of limited use in the workplace, where most problems arise in the context of time and resource constraints and incomplete information. Instruction that places inordinate emphasis on individual learning, abstract thinking, and context-free skills may not provide students with the tools they need to become accomplished out-of-school learners.[59]

In contrast, contextual instruction can better align school learning with the demands of complex work settings. Group work, projects that involve clients from business and the community, feedback from employers and other adults, and classes that reflect on lessons learned outside school can make schoolwork more like real work. These instructional practices can help students learn communication, negotiation, and other problem-solving skills that are of increasing importance to economic success. (See box, page 19: "Applied Learning Takes Root in Fort Worth")

SCHOOL-TO-CAREER: A STRATEGY FOR MOTIVATION AND INSTRUCTION

We believe that the school-to-career approach can help our schools and young people address these issues of motivation and instruction. School-to-career initiatives combine:

- Applied learning in the classroom
- Work experiences in workplace or community settings
- Coordination between learning at school and at work
- Strong relationships between young people and adults outside school.

By forging closer links between in-school and out-of-school learning and promoting contextual learning, this approach can motivate students and help them achieve the higher standards demanded of them. (See box, page 20: "Work as a Context for Academic Learning")

Like the movement for higher standards, the school-to-career movement originated in

APPLIED LEARNING TAKES ROOT IN FORT WORTH

The Fort Worth Independent School District is a leader in professional development strategies designed to help teachers understand and use applied learning methods. The district has developed the following comparison between student and teacher roles in traditional versus applied learning methods:

Traditional Teaching Methods	Applied Learning
Teacher knows answer.	No one knows answer (i.e. problem is ill-defined).
Students routinely work in isolation.	Students routinely work with others, including teachers, peers, and community members.
Teacher plans all activities and projects.	Students and teacher plan and negotiate activities and projects.
Teacher decides method of assessment.	Students routinely assess themselves and negotiate summative evaluations.
Information is organized, interpreted, and communicated by teacher to students.	Information is acquired, organized, interpreted, and communicated by students to appropriate audience(s).
Reading, writing, and mathematics are treated as separate disciplines; listening and speaking are often missing.	Integrated real-world merging of all disciplines is necessary for problem solving; listening and speaking are a fundamental part of learning.
Thinking is usually theoretical and syllogistic.	Thinking involves problem solving, reasoning, and decision making.

(For a detailed examination of employer involvement in Fort Worth's school-to-career program, see the volume of case studies published separately by CED).

the 1980s. Early in that decade, a number of high-profile studies directed attention to the labor market problems of job seekers without college education.[60] At the same time, many employers had become frustrated with scattershot and largely superficial partnerships with the public schools that failed to produce results. The poor results from vocational education prompted Congress in 1990 to rewrite the Vocational Education Act (PL 101-392), putting much more emphasis on academic standards, connections with employers, and links to postsecondary institutions, particularly two-year colleges. In addition, with support from foundations and the federal government, schools and businesses across the country launched or expanded innovative efforts to connect school and work more effectively. Enthusiasm for these models provided the catalyst for the 1994 federal School to Work Opportunities Act (See box, page 21: "The School to Work Opportunities Act") Its passage has led to further program experimentation and growth through developmental grants to innovative states and localities.

The design of school-to-career programs varies greatly:

- Some programs are small and intensive, targeting the labor needs of a few local employers. For example, the Wisconsin Youth

Apprenticeship Program in Printing is serving 129 students in five sites in the 1997-98 school year.

- Others are designed to change the learning experience of an entire school. At Roosevelt High School in Portland, Oregon, all ninth graders have job shadowing experiences as part of a mini-course in career exploration, followed by a tenth-grade curriculum organized around one of six broad career clusters.
- Career academies, pioneered in the late 1960s, are schools-within-schools that group 125 to 250 students with their own teachers in a program frequently organized around an occupational theme, such as health care, graphic arts, or finance. Academies usually admit ninth- or tenth-grade students and emphasize interdisciplinary learning, projects, employer involvement in curriculum, and internships in the eleventh and twelfth grades.
- Many vocational education programs have tried to improve student outcomes through closer connections to employers and/or community colleges. Tech Prep vocational

WORK AS A CONTEXT FOR ACADEMIC LEARNING: A TALE OF TWO SCHOOLS

Just as medical, business, and other professional schools use projects and work-based experience to structure learning, innovative high schools are using hands-on learning in classrooms, workplaces, and the community to help students master academic skills. These strategies are proving as effective for top students in elite suburban high schools as they are for at-risk inner-city youths.

At the highly competitive Thomas Jefferson School for Science and Technology in northern Virginia, contextual learning and other school-to-career principles are applied throughout the school, including in advanced placement classes. For example, students study science through hands-on projects that require teamwork (e.g., working in small groups to build a vehicle that can climb a hill). These activities culminate in a major senior project. Although most students do their projects in the school's labs, one in five opts for a 15-hour-a-week unpaid internship, usually with one of the region's premier science and technology firms. Thomas Jefferson's success belies the fear that school-to-career programs distract students from academic learning. Ninety-six percent of students at Jefferson scored high enough on their advanced placement exams to earn college credit.

Boston's Fenway Middle College High School attracts a very different student population, many of whom are returning dropouts or students who have been held back in traditional high schools.[61] Yet, Fenway also uses work to motivate academic learning. Fenway is organized into three houses, each linked to a broad career area and to local business partners. In the ninth and tenth grades, interdisciplinary courses incorporate workplace situations, such as following a patient's medical history or exploring clinical and ethical dilemmas that arise in treatment decisions. Eleventh-grade students undertake projects for a business firm and rotate through different departments. To help the CVS pharmacy chain decide where to locate a new store, for example, students analyzed demographic and economic data, sought the advice of accountants and architects, made site visits, projected design costs, and presented written and oral reports to company executives.

In their senior year, students spend part of each day on the job. In the final semester, they undertake a full-time, five-week internship and complete a work-related paper. Fenway assesses internships and senior projects according to the same criteria used for other course work, focusing on how well the student has demonstrated five "habits of mind:" perspective, evidence, relevance, supposition, and connection.

THE SCHOOL TO WORK OPPORTUNITIES ACT

The School to Work Opportunities Act of 1994 (PL 103-239) provides five-year federal "seed grants" to help states develop and implement school-to-career programs. These programs are required to involve broad collaboration among employers, organized labor, educators, and public agencies responsible for economic and workforce development, education, and human services. Key design elements include:

- ***School-Based Learning:*** Integration of high-quality academic and vocational instruction, improved links between high school and related postsecondary programs, and strategies for introducing students to all aspects of a broadly defined industry.
- ***Work-Based Learning:*** Opportunities for students to obtain work experience, on-the-job training, and adult mentoring coordinated with school studies.
- ***Connecting Activities:*** Activities to recruit employer partners, match students with workplace opportunities and mentors, and help schools and employers strengthen their collaboration.
- ***Career Development:*** Activities in schools and workplaces to help students become aware of their interests and strengths, learn about career options, formulate goals, and make wise choices about their educational program.

The Act provides a temporary infusion of start-up resources to states and localities. By early 1997, the federal government had provided $643 million to 37 states, which are required to pass the majority of these funds to local and regional partnerships. More than 1,000 local partnerships have received federally funded grants. Further grants from the $1.345 billion authorized by Congress will be awarded over the next several years. The Act is scheduled to expire after 2001.

programs promote smooth transitions between high school and community college, and some have added work experience. Co-op programs provide young people with work placements, but only a minority of them link work experience with reforms in classroom learning.

- School-based, youth-run enterprises and community service programs are the primary "real world" learning experiences for students in many high schools. As many as 18 percent of U.S. high schools house one or more student-run enterprises. These include restaurants, graphic arts and print shops, car repair businesses, and other retail establishments.[62] Students in service learning programs might conduct environmental quality checks in their neighborhoods, serve as translators for non-English-speaking patients at community health clinics, or tutor elementary school children.
- In some communities, school-to-career strategies are being used to reform curriculum and learning activities in entire schools and across the district. For example, the five communities in Jobs for the Future's Benchmark Communities Initiative—Boston, Louisville/Jefferson County, Milwaukee, Philadelphia, and North Clackamas, Oregon—have agreed to a common set of measurable five-year goals for changes in instructional practice, work-and community-based learning opportunities, and school and district policies that are designed to extend school-to-career opportunities to all high school students.[63]

Whatever their specific program elements, school-to-career initiatives are designed to help young people overcome the cynicism and nega-

tive lessons about working that they currently learn in school. When young people engage in real work, they learn lessons they are often unwilling to accept from teachers in school. Work-based learning provides conditions for learning that schools cannot easily simulate, including real deadlines, customer feedback, and problem solving with limited resources. Seeing that their work matters to others and that its quality has consequences can motivate young people not just to do an assigned job but also to rethink their commitment to school and learning. (See box: "How Students View Work-Based Learning Experiences")

An important benefit of work-based learning is the opportunity for young people to develop constructive relationships with adults. Research on youths who overcome adversity indicates that strong adult relationships are essential to healthy development and success.[64] According to Harvard psychologist Howard Gardner, work-based learning can "permit aspiring youngsters to work directly alongside accomplished professionals, hence establishing personal bonds as well as a sense of progress towards an end."[65]

EVIDENCE ON THE EFFECTIVENESS OF PROGRAMS LINKING SCHOOL AND WORK

Anyone who visits a well-run school-to-career program immediately senses that *something* positive is going on. The classroom is alive. Students and teachers are engaged and proud of their accomplishments.

HOW STUDENTS VIEW WORK-BASED LEARNING EXPERIENCES

Young people can be very articulate about the value of learning experiences outside the classroom—and about the differences between expectations and performance in school and at worksites. Anecdotal comments such as the ones presented here are remarkably consistent across effective programs linking school and work.[66]

One student intern at a commercial television station was impressed by the value employees placed on learning from mistakes. He noted that his supervisor "showed us a room where they kept tapes back to 1984 . . . because it helps them figure out what mistakes were made in the past and how to improve."

Another student attributed a renewed interest in academic learning to her senior-year work placement: "You know how it is with teenagers. We think we know everything. And school doesn't really do anything to change that. But at Polaroid I saw that there were things I didn't know and skills I needed to learn. And when I got back to school, I realized I could pick up a lot of those things back there."

A high school senior in a program that combined several days a week of work-based learning with a solid academic curriculum noted a dissonance between the values and messages she learned at work and those she got at school. In school, she explained, "We always say, 'It's good enough.' Mr. Pierce [her supervisor at the worksite] always says, 'There's no such thing as good enough.'"

A student enrolled in a program that featured a team-oriented community service project had a similar realization. "My attitude was always, 'Take this class, work hard, and get an A,' or 'Forget it. I'll take the zero.' [But in our community project, there] is too much at stake. If you say you're going to do something, you have to be committed. People depend on it."

This is exactly the kind of attitude and understanding that employers seek—and that schools have a hard time teaching.

However, there has been little rigorous evaluation of the outcomes of programs that link school and work. Most programs are relatively new, and many are still changing their structure and organization. Different definitions of "school-to-career" models make it difficult to compare outcomes across programs or between school-to-career and traditional learning curricula.

Program design and implementation vary greatly. Moreover, large-scale controlled studies are hard to implement in education. Random assignment evaluations are costly and can be controversial because the research design often requires that some students be denied the option of choosing a potentially beneficial program. Following participants long enough to assess the success of their transition into postsecondary learning and adult employment is both expensive and difficult. In recognition of these circumstances, a panel of evaluation experts convened by the federal government has recommended against a rigorous random-assignment evaluation of the outcomes of school-to-career programs at this time.[67]

Nevertheless, existing research and practice are encouraging with respect to the value of integrating work and learning. Positive signs come from studies of *learning in context at the workplace, work experience among high school students,* and *recent school-to-career initiatives.*

Workplace Learning. Contextual learning has been successful with low-skill adults. A study of contextual instruction for U.S. armed forces recruits in reading, writing, and mathematics concluded that workplace literacy instruction that combines work and learning is significantly more effective than typical "up-front" adult basic education classes.[68] A control group was trained in the traditional way, with several weeks of literacy classes before entering job-related military training. A second group received literacy and job training simultaneously, using materials drawn from recruits' specific work assignments. The experimental group had superior literacy gains and achieved those gains faster.

One of the few federally funded job training programs that has improved employment and earnings for disadvantaged individuals is the Center for Employment Training (CET) in San Jose, California.[69] CET provides training of three to six months to a population of which about 65 percent are high school dropouts. The program emphasizes close connections with employers, recruitment of staff with experience in industry, and training in specific skills demanded in the labor market. CET promotes the integration of basic education and vocational skills in an environment simulating real-work settings. One rigorous evaluation found impressive earnings gains for graduates, including an unprecedented $6,000 earnings gain in the third and fourth years after graduation, more than 40 percent higher than that for the control group.[70]

High School Work Experiences. Most young people work at some time while in high school. Work experience can be economically, developmentally, and educationally valuable, especially if the hours of work while in school are limited and the work experience is of high quality.[71] However, academic performance appears to suffer if students work more than 20 hours per week.[72]

Work experience programs for at-risk students that do not link work to an academic learning program have few lasting effects on employment or educational attainment. This was the primary finding of the Youth Incentive Entitlement Pilot Project, a multi-site demonstration that guaranteed full-time summer jobs and part-time, school-year, minimum-wage jobs to disadvantaged 16-to-19 year-olds who stayed in school. Although the program raised employment rates significantly during the subsidized period, neither school enrollment nor high school graduation rates rose.[73] These results are consistent with those from studies of other "work experience only" programs, in-

cluding the Supported Work Demonstrations and Neighborhood Youth Corps.[74]

At the same time, working while in school appears to have economic benefits for young people who enter the work force immediately after high school. Among these youth, those who worked while in high school seek work more actively and earn higher wages than their counterparts who did not work. These effects occur in the first few years after graduation and even seven to ten years later.[75]

The value of working in high school depends to a great extent on the *quality* of the student's work experiences. High-quality workplace experiences can improve attitudes and performance. When young people use cognitive skills and perceive opportunities to learn in their work experience, they have a higher commitment to quality on the job and are less cynical about the world of work.[76] Likewise, students who work at more complex jobs and have an opportunity to develop skills report higher wages and lower unemployment for at least the first three years after high school.[77]

Work experiences in "school-supervised" programs appear to be of higher quality than typical youth jobs. Those in school-supervised jobs rate them higher in terms of three important developmental goals that correlate with greater employment and earnings: using skills and abilities, learning new skills, and getting to know adults.[78]

School-to-Career Initiatives. Results to date from formal evaluations of school-to-career programs are limited. As *Education Week* senior editor Lynn Olson puts it, "At present, we are left relying largely upon argument and anecdote."[79] Perhaps the most systematic review of evaluations that include work-based learning is a 1995 congressional Office of Technology Assessment (OTA) report. While noting the limitations of existing research, OTA presented the following "prudent interpretation of the evidence":[80]

- Work-based learning in school-to-work programs generally offers more learning opportunities than do the jobs that students find on their own.
- Most students have been excited and motivated by their work-based learning, feeling that it helps them make better use of their schooling and prepares them for employment.
- Most employers have been quite satisfied with the students who participate in work-based learning.
- Work-based learning has generally produced small positive effects on attendance, grades, graduation rates, and participation in postsecondary education, and some programs appear to have dramatically increased postsecondary enrollments.
- Work-based learning has shown modest to negligible effects on employment, career progression, and earnings during the first few years after graduation, with a few small negative findings. The results for college-level programs have been more positive than those for high school programs.
- Programs with a reputation for excellence have achieved it only after several years of adjustment and fine-tuning.

Although definitive evidence is lacking, recent research points to at least four ways that school-to-career programs may improve student learning and preparation. We believe that in time these changes will lead to significant improvements in learning.

(1) *More Academic Focus.* Many critics charge that school-to-work initiatives produce a watered-down curriculum. However, the evidence suggests just the opposite. A study of 16 innovative school-to-career programs conducted by the Manpower Demonstration Research Corporation (MDRC) found that students in these initiatives took more college prerequisite courses than their peers enrolled in the general curriculum, particularly in math and science.[81]

(2) *Improved Reading and Math.* Some school-to-career programs appear to accelerate improvements in reading and math. Students with low reading scores prior to grade nine who were randomly assigned to career-magnet high schools in New York City were more likely to pass the state regents exam in math than students who "lost the lottery" for admission to the magnet schools. Career magnet students with average initial reading scores increased their scores up to 50 percent faster than students in regular schools.[82] At the seven highest-performing *High Schools That Work* programs assisted by the Southern Regional Education Board, National Assessment of Educational Progress (NAEP) test scores rose over a three-year period by 65 percent in reading, 36 percent in math, and 70 percent in science.[83]

(3) *Fewer Dropouts.* Studies of California career academies have found a higher graduation rate than that for matched students in the same schools. The three-year dropout rate among students who entered academy programs as sophomores was 7.3 percent, compared with 14.6 percent for students in a comparison group.[84] In some sites, most notably the Oakland Health and Biosciences Academy at Oakland Technical High School, academy students had better attendance, more credits, higher grade-point averages, and fewer failing grades. The research team concluded: "It is possible to achieve the goals of dropout prevention and college preparation at the same time, in the same program."[85]

(4) *More College Enrollments.* Students in effective school-to-career programs frequently develop new career goals that require higher education. One study of four programs whose students had initially been identified by their teachers as "non-college-bound" reported college entrance rates of 77 to 84 percent.[86] New York City's career-magnet high schools appear to induce students to attend college, and graduates earn more college credits than do their peers from the city's traditional high schools.[87]

THE CHALLENGE OF MOVING TO SCALE

While these findings are encouraging, research on the effectiveness of small, individual programs provides limited guidance on how to produce similar results for large numbers of students. "Hothouse" programs of manageable size, developed under special conditions with extra resources and strong leadership, are by definition exceptional. The challenge to any reform effort is improving the routine educational experience of large numbers of students in a significant proportion of schools.

Like most reforms, school-to-career practice is evolving unevenly toward higher quality and larger scale. A study of early efforts in eight states funded under the School to Work Opportunities Act highlights this unevenness and the difficulties of changing schools, workplaces, and the connections between them. The study found that:[88]

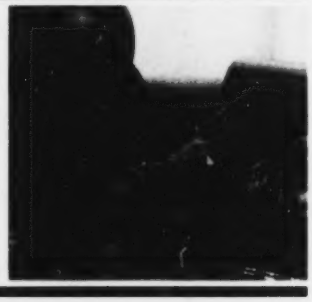
- States have begun building systems by creating employer incentives, promoting career development, facilitating college enrollment, and defining appropriate career clusters, but none of the eight states have done all these things. In some cases, school-to-career priorities have been peripheral to or inconsistent with other education reforms.
- Activities to improve career awareness are the most common feature of these programs; but few schools deliver a coherent career development sequence.
- Changes in school curriculum (such as creating career majors and integrating academic and vocational instruction) have received lower priority than others.
- Many local partnerships have concentrated on promoting workplace activities, but obstacles to expanding structured activities linked to school curriculums remain.
- Student participation in individual school-to-career activities is common, but only two

percent of 1996 seniors took part in a full program of career development, school-based career majors, and workplace activity linked to school curriculum.

- Many local partnerships have been created; but those that include multiple districts and many employers have typically taken only modest steps toward common policies and practices.

More rapid progress will be needed if school-to-career reforms are to affect a significant proportion of high school students. Designing effective programs is only the first step. We must then go on to build and strengthen institutions that bring employers and schools together across schools and districts. Moving to scale while preserving quality will require greater efforts both within schools and between schools and their community partners, including employers and their organizations. The roles of employers in this enterprise are discussed in the following chapter.

Chapter III
Employer Roles in Improving Learning



The changes we advocate for our nation's schools and communities will require the active engagement of employers from the private, public, and nonprofit sectors. The business community has long been active both in promoting efforts to raise academic achievement and in providing work experiences and jobs for young people. However, employers rarely see any connection between their activities in these two areas. The central emphasis of this policy statement is that the two efforts should be firmly linked.

Toward this end, this chapter explores four major roles that employers can play to improve learning and strengthen the links between school and work.

1. Promoting academic achievement in policy and practice

2. Advocating school-to-career reforms to improve academic achievement and career preparation

3. Providing work experience for students and teachers

4. Participating in and supporting intermediaries that facilitate school-business collaboration.

PROMOTING ACADEMIC ACHIEVEMENT THROUGH HIGH STANDARDS AND SUPPORTIVE COMPANY PRACTICES

Supporting High Academic Standards

For most of this century, employers did not take a particularly active role in elementary and secondary education policy. Most employers in our industrial system were satisfied with hiring graduates from local high schools and fitting them into relatively low-skill, low-autonomy jobs. Parents and young people saw little reason to object, as long as a high school diploma remained a ticket to well-paid work.

By the late 1970s, this complacency began to disappear in the face of stronger competition for educated and skilled workers. Employers became more actively engaged in state and national policy debates on education, both individually and through their national leadership groups. In 1985, CED issued the policy statement, *Investing in our Children: Business and the Public Schools*, which called for higher standards, curriculum changes to increase the

employability of graduates, and greater decision-making power for teachers, principals, and local boards of education.[89] Throughout the past two decades, CED and other business organizations have persistently promoted higher academic standards and a more effective system for assessing school and student performance.[90] These priorities were underscored at the 1996 National Education Summit. (See box: The 1996 National Education Summit.)

Business community advocacy has begun to pay off. The progress that states have made in setting academic standards and promoting school-level accountability is due in large part to the political support provided by businesses, large and small.

However, classroom practice is never changed by public policy alone. State reforms have yet to be translated broadly into improvements in instruction and practice that motivate the typical student to meet these higher expectations. Improved instruction will require assessment tools to guide teachers, as well as professional development opportunities to expand teachers' instructional repertoires. In addition, progress toward meeting higher standards will require employers and others in the community to become more involved with school and classroom practice, a role employers have traditionally resisted but have recently begun to embrace. (See box, page 29: "School-Business Partnerships Evolve Toward More Systemic Change".)[91]

THE 1996 NATIONAL EDUCATION SUMMIT

In March 1996, President Clinton gathered with 41 governors, 49 business leaders, and 34 others in Palisades, New York, for the second National Education Summit. Participants drafted a strategy for joint efforts to align the standards for achievement that guide schools with the skills required for work in the new economy.

Business participants made several commitments designed to help promote student achievement at and following the Summit. They agreed to make location decisions contingent on the educational performance of states and localities. They promised to change their firms' hiring policies within one year to incorporate the review of transcripts or other school-based records such as diplomas, skill certificates, or portfolios. They also made a commitment to direct education-related philanthropy aimed at raising academic standards and improving student achievement. Since the Summit, the Business Roundtable, National Alliance of Business, and U.S. Chamber of Commerce have launched a "school records initiative" to promote the review of transcripts and other school records in hiring decisions.

In the fall of 1996, the Education Summit planning committee created ACHIEVE, an independent organization for monitoring progress toward these and other commitments made at the Summit. ACHIEVE serves as a clearinghouse for information on state standards, enabling states and localities to compare and coordinate their efforts.

Adopting Employment Practices That Encourage School Achievement

As noted in Chapter II, current hiring practices reinforce many young peoples' beliefs that effort and achievement in school will not improve their job prospects. Potential employers rarely ask about courses or grades, and although they often request references, they seldom ask specifically for a teacher's recommendation.

There are reasons for this lack of connection between high school performance and hiring decisions. Based on past experience, employers have little faith that transcripts and diplomas can help them identify productive workers. Moreover, many employers have been deterred by legal rulings that high school graduation and grades can be used to screen job

SCHOOL-BUSINESS PARTNERSHIPS EVOLVE TOWARD MORE SYSTEMIC CHANGE

There are more than 200,000 one-on-one collaborations between individual employers and schools across the nation.[92] The ambitions of most of these partnerships have been modest. An employer might "adopt-a-school"—donating old computers, sponsoring awards dinners, or serving as a principal for a day. However, some partnerships recently have begun to engage employers in improving classroom instruction and learning, rather than merely as "deep pockets." Since 1992, for example, the National Association of Partnerships in Education (NAPE) has promoted more extensive partnerships and coalitions of schools, employers, and other community leaders among its 7,500 member programs, with particular emphasis on their involvement in standards reform and school-to-career initiatives.

In 1994, the National Employer Leadership Council (NELC) was formed to support employer efforts to improve the school-to-career transition. With advice from its member companies, NELC has developed an "employer participation model" that describes more than 50 options for employer involvement with schools. This model emphasizes comprehensive partnerships that target academic achievement and workforce preparation by:[93]

- **Working with students and teachers** by providing information and experiences to prepare students for challenging careers and by working with teachers to improve student skills and academic performance;
- **Strengthening company practice** by supporting new and closer relations with education providers;
- **Building more effective and efficient workforce development systems** in partnership with policymakers and other stakeholders.

applicants only if employers can demonstrate that transcripts and diplomas are valid predictors of performance for the specific jobs being filled.[94]

Some companies are trying to change the signals they send to schools and young people by making school achievement count in hiring. BellSouth Corporation has begun to give priority in recruitment for entry-level career jobs to graduates of the 650 high schools in the Southern Regional Education Board's *High Schools That Work* initiative who earn the SREB Certificate of Educational Achievement. This certificate confirms that a recipient has completed an upgraded academic core curriculum as well as a vocational major and has met performance goals in reading, math, and science.[95]

Other employers are moving to use transcripts in hiring decisions. (See box on IBM's use of transcripts, page 30.)

More than 250 Delaware employers have joined the state Business/ Industry/ Education Alliance's campaign to encourage firms to consider transcripts when hiring. When a statewide survey found that schools took too long to respond to employer requests for transcripts, the Alliance provided every high school in the state with a fax machine.

Since 1989, the Eastman Chemical Company, a major employer in Kingsport, Tennessee, has asked applicants to provide high school or college transcripts, thereby encouraging students to complete college prep-level courses in math, science, and English. Eastman has enlisted school personnel from local high schools to help employees who make hiring decisions understand the transcripts, which are rarely "user-friendly." According to Eastman, enrollments in higher-level math and science courses have increased, the failure rate among entry-level employees has declined, and less remedial education has been needed for new workers.[96]

If employers begin to request evidence of school performance from young job applicants, the behavior of students, teachers, counselors, and school administrators will change. However, employers will have to be quite explicit in defining their needs and expectations; and schools will have to make transcripts and other evidence of school performance easier to understand, readily accessible, and relevant to employer priorities. This will take time, but a collaborative effort to improve this information and change the signals it conveys can significantly improve incentives for learning.

Employers can also encourage the students they already employ to value academic achievement and work hard in school. Voluntary limits on long work schedules and on shifts that interfere with homework can make it easier for young people to juggle school and work responsibilities—and to put school first. Requirements that student employees maintain a minimum grade-point average or school attendance record can also provide a strong incentive for young people to concentrate on school studies. Employers can demonstrate a commitment to student achievement through other benefits for their working students, including tuition assistance and additional incentives to pursue postsecondary education, setting aside time at the worksite for students to do homework, and simple gestures such as Student of the Month awards.

ADVOCATING SCHOOL-TO-CAREER REFORMS

School-to-career principles and practices hold great promise. When designed effectively, these initiatives provide a combination of high academic standards, engaging instruction strategies, exposure to work and to adults, and incentives for hard work. They are particularly well-suited to young people who have been uninspired and ill-prepared in school.

Unfortunately, this message has not always been clearly articulated and promoted by the business community. Some employers have feared that emphasizing work-based learning could compromise the campaign for higher academic achievement. Others have collabo-

IBM REQUESTS HIGH SCHOOL TRANSCRIPTS FOR MANUFACTURING HIRES

Acting upon a commitment made at the 1996 National Education Summit, IBM has changed its hiring criteria for entry-level manufacturing jobs to include high school transcripts for individuals with less than five years of work experience.

IBM has addressed legal barriers by identifying those aspects of transcripts that predict job success. The company performed a nationwide analysis to determine the skills required in its entry-level jobs, including communication, logical reasoning, and teamwork. The research determined that academic performance in certain courses correlated with attainment of these skills. IBM also determined that classes such as chemistry, physics, and math impart knowledge directly applicable to entry-level manufacturing jobs. For example, a basic command of statistics and algebra is required to interpret Statistical Process Control (SPC) data. Finally, IBM demonstrated that the correlation between academic and job performance is strongest for workers with limited employment experience.

As a result of this careful process, IBM has created a new employment application form that incorporates school transcripts along with job experience and other relevant information. By June 1997, it was being used in IBM's manufacturing sites in Vermont, California, Minnesota, New York, North Carolina, and Texas.

rated actively with local schools but have stayed on the sidelines of state and national policy debates. Some employers question whether their firms will benefit from partnerships with schools. Many simply have no experience with these issues. A stronger and clearer public message from the business community is needed if initiatives linking schools and employers are to expand. Employers and their organizations must become more aggressive in promoting reform—and in defending it from its critics.

A powerful political attack has been launched recently against school-to-career efforts and their proponents. This campaign has had a chilling effect on policy and practice in many localities and states and on the legislative debate in Congress. Although some of the motivation for this attack stems from reasonable concerns about academic tracking and inappropriate government intervention, the criticism is based largely on misguided and ill-informed assessments of both the School to Work Opportunities Act and the activities it promotes. Critics argue that the Act is a centralizing power grab by the federal government that endangers local control of schools. They contend that school-to-career programs reduce educational and employment opportunities by steering young people into specific vocations identified by federal bureaucrats.

These criticisms are far off the mark, as explained in Chapter II. More effective ties between schools and employers improve student motivation to learn, make young people more active learners, and provide experiences and tools for more informed choices about their lives. Fortunately, business leaders and their organizations have begun to respond publicly and to articulate a positive vision of these reforms. A number of business groups, including the American Business Conference, the National Alliance of Business, the National Association of Manufacturers, and the U.S. Chamber of Commerce, joined CED in issuing a statement in late 1997 that champions school-to-career as a critical component of the nation's education reform agenda. This message deserves wide distribution—to employers, educators, policymakers, and the public. (See box, "School-to-Career Initiatives: The Business View" for an excerpt from the full statement, page 32).[97]

PROVIDING WORK EXPERIENCE FOR STUDENTS AND TEACHERS

Options for Employers and Students

Employers control access to jobs and workplaces. In effective programs linking school and work, employers open their workplaces to students for a range of experiences. Some programs provide job shadowing for students who are too young for paid employment. Others engage employers in summer jobs for youth. Short internships of one to two weeks form the core of initiatives in some cities, while others emphasize year-round internships. Stephen Hamilton, director of the Cornell Youth and Work Program, suggests the following typology to describe the range of work experiences that can be incorporated into a school-to-career system.

- **Visits to Workplaces**

  Field trips: one-time visits to observe workplaces

  Job shadowing: longer-term, sometimes multiple visits to observe by following a worker through his or her daily routine

- **Work-Like Experience**

  Service learning and unpaid internships: voluntary service, not necessarily with a career focus

  Youth-run enterprises: workplaces created to give young people employment and management experience

- **Employment**

  Youth jobs: jobs ordinarily open to teens but traditionally not rich learning opportunities

SCHOOL-TO-CAREER INITIATIVES: THE BUSINESS VIEW

Successful school-to-career initiatives:

- Are part of the main, academically rigorous path of education for all students
- Expose students to career options they might not know about otherwise
- Give participants skills that can be applied and adapted to any career of their choice
- Prepare students to choose any course of endeavor including further education.

School-to-career initiatives are *not:*

- Plans to divert students away from school into the workplace
- Separate paths designed for "slow learners"
- Tracking systems that force students into certain jobs
- Dependent on federal funding or programmatic direction.

We believe that an effective school-to-career initiative emphasizes the following:

- **A Primary Goal is Higher Academic Achievement**. School-to-career programs are intended to ensure that all students, college and non-college bound, meet challenging academic standards. Students who complete a school-to-career program should be prepared to succeed in an associate or baccalaureate degree program. In the best of these programs, students can only participate in the work experience component if they stay in school, take a core curriculum, maintain satisfactory grades, and make reasonable progress toward completing a degree.
- **Local Communities Design the Programs**. A school-to-career initiative can only succeed if based on voluntary, local decisions in partnerships between educators, local officials, and ultimately parents and students.
- **School-Based and Work-Based Learning Are Coordinated**. Academic curriculum and workplace experiences reinforce each other to enhance overall educational achievement. Work-site learning involves practical demands for mathematics, science, reading, writing, social studies, and computer skills. Work-site learning also develops skills that traditional classroom learning does not do as well, such as problem solving, management of time and resources, responsibility, initiative, and communication skills. Students participating in effective school-to-career programs tend to take more courses in advanced math and science, increase their grades, graduate at higher rates, go on to postsecondary education at higher rates, and are better prepared to succeed in jobs. In addition, youth who might otherwise drop out of school are more likely to stay in school and complete their education.
- **Employer Participation Adds Relevance**. Employers should inform schools of the knowledge and skills demanded by the economy of the future and provide the necessary learning experiences.

Subsidized employment training: paid work as part of a training program

Cooperative education and paid internships: school-related work experience

Youth apprenticeship: several years of work and learning leading to certification.

Work-based learning offers students many benefits that are difficult to provide in classroom settings, including:

- Exposure to the daily routines and expectations of different workplaces and jobs;
- A laboratory for exercising complex problem-solving skills in an environment of real-world constraints and pressures;
- Demonstration of how learning is used and valued in work environments; and
- Personal connections to employers, adult mentors, and careers.

According to a recent survey, the number of high school seniors in programs that combine the three key elements of school-to-career—work experience linked to school, an integrated curriculum organized along career themes, *and* comprehensive career development activities—is small, perhaps about 50,000 students nationally. [98]

However, the same survey reported that about 400,000 seniors, almost 1 in 6, are involved in paid or unpaid work experience linked to their school program, either through class assignments that draw on their experience or inclusion of work experience as a factor in determining grades. Between 600,000 and 800,000 high school juniors and seniors participate each year in work experiences that bear some relationship to their school curriculum.

Employers who provide work-based learning opportunities to high school students are generally pleased. (See box: "Why Do Employers Participate in Work-Based Learning?") One study concluded that most firms participating in a national sample of intensive work-based learning partnerships with schools were satisfied with student performance, found the program beneficial, would continue their involvement, and would recommend it to peers. [99] Participating employers appear to maintain their involvement even in the face of mergers or downsizing. [100] There is also evidence that employer assessments of the costs and benefits of work-based learning become more positive over time, as firms come to appreciate enhanced morale and other unexpected advantages. [101]

In a number of cities, structured work experiences have become a central part of the high school learning program on an impressive scale. In Boston, more than 1,200 out of 6,700 juniors and seniors (about 18 percent) are involved in programs that include paid work. [104] In Cambridge, Massachusetts, about 13 percent of high school seniors at the Rindge School of Technical Arts participate in paid and unpaid internships annually. [105] In Philadelphia, the number of students with paid work experience rose from 400 in 1994 to 2,200 by the end of the 1996-97 school year. [106] (See box, page 34: "Moving Toward Scale in Philadelphia"). Each of these communities believes it can further expand both the number of employers providing work-based learning experiences and the pool of interested students.

WHY DO EMPLOYERS PARTICIPATE IN WORK-BASED LEARNING?

Employers give three reasons for participating in work-based learning programs for young people: (1) philanthropic or community interest, (2) the firm's business interests; and (3) the collective interest of improving a community's or industry's labor supply. [102] Employers note the following benefits:

- **Gaining productive workers** After a limited training period, most students are productive enough to justify their wages.
- **Trying out young workers prior to hiring** The screening function is particularly important in industries where entry-level hiring needs are large and employers are concerned about high costs of turnover.
- **Positive public relations** Employers in industries rooted in communities, such as hospitals, utilities, and local telecommunications companies, are especially interested in good public—and customer—relations.
- **Boosting the morale of regular employees** Employers are frequently surprised by the positive effects of working with young people on morale and supervisory skills. According to one Procter and Gamble supervisor, "For me, it's hard to put into words, just seeing the kids mature, becoming part of the workforce, becoming successful. I personally haven't found any of it hard, it's so damn interesting. It makes you feel young again." [103]

These innovative communities, however, remain the exceptions. They are the beneficiaries of years of close business-school relationships, strong school-system leadership, and the allocation of staff and other resources to employer involvement. In most school districts the expansion of employer-provided work experiences has been far slower. In 15 work-based learning partnerships analyzed by the congressional OTA in 1995, the annual median growth in employer involvement averaged only six employers per program, each of which produced about two new student placements per year.[107] Most employers who provide intensive work experiences for young people, particularly the small and mid-sized employers who represent the bulk of any community's businesses, employ between one and three students.[108] (While these data were collected before School to Work Opportunities Act funds became available, and the growth rate has accelerated, in most communities employer participation is still too low to have affected a significant proportion of high school youth.)

What level of employer participation would be needed to make work experience a significant element of the mainstream high school curriculum? To provide one-quarter of high school juniors and seniors nationwide with work-based learning, about 1.5 million placements would be needed each year.[109] This is not impossible, given that there are more than 6.5 million private and not-for-profit business establishments in the United States.[110] Yet, the task is formidable, for there are many obstacles to such a substantial expansion. Many small and medium-sized employers are wary of the time demands on supervisors and managers. In some urban and rural communities, schools are located far from potential employers. Some firms are deterred by child labor laws and workers' compensation liability. Labor unions have

MOVING TOWARD SCALE IN PHILADELPHIA

In the early 1990s, reformers in Philadelphia began using school-to-career programs as a way to leverage improvements in educational achievement. With the arrival of Superintendent David Hornbeck in 1994, the troubled system made school-to-career an element in its ambitious *Children Achieving* system-wide reform strategy. The Philadelphia public school system has now become one of the few school districts to provide several thousand young people with intensive work-based learning closely linked to their academic programs.

In 1996-97, the Philadelphia School District provided paid, one- and two-day-a-week work-based learning opportunities to 2,200 high school juniors and seniors. The district hopes to expand ultimately to 6,000 paid placements annually, which would serve about 25 percent of the district's eleventh and twelfth graders.

Over 240 Philadelphia employers participate. Half are private firms, and the other half represent government, academia, and non-profit health care. Nearly half of the participating employers have fewer than 50 workers, and about a quarter employ more than 500. To facilitate such a large-scale program, the school system employs staff whose sole job is to contact employers, explain the work-based learning options, and solicit their participation.

Juniors and seniors not eligible or selected for paid work placements are offered other work-like experiences, including unpaid internships, community service, special projects, and school-based enterprises. These efforts have also grown significantly. About 1,000 students participate in community service learning activities. The district also promotes an annual City-Wide Job Shadowing Day for ninth graders that involved 2,000 students and 150 employers in 1996. (For a more detailed examination of employer involvement in Philadelphia's program, see the volume of case studies published separately by CED.)

spearheaded school-to-career efforts in some communities and industries, but in others unions have been hesitant, fearing member displacement and watered-down craft training.

For these reasons, we believe that significant expansion of work-based learning will require not only more one-by-one recruitment of new employers but also innovative ways to expand and "stretch" employer involvement. Several promising strategies to accomplish this are described below.

Providing Work-Based Learning Opportunities for Teachers

The high school, whose work organization has changed little in the past 50 years, is the only work environment that many teachers know first-hand. Having spent their lives in schools, first as students and then as teachers, many of them have only limited experience of the world of work outside and cannot transmit knowledge of that world to their students.

Employers can help teachers overcome this insularity by offering internships, sabbaticals, and summer jobs that illustrate the changing nature of work processes and the range of skills valued in modern firms. These arrangements are attractive to employers, because they are frequently easier to arrange and demand a less intensive commitment than many placements for students. Such modest investments in teachers have the potential to change the classroom experience for large numbers of young people. Teachers who have had such experience frequently report introducing new instructional methods and materials into their classrooms and establishing new collaborative relationships with local employers. (See box: "Portland's Teacher Internship Program," page 36.)

Alternatives to Employment That Provide Similar Learning Benefits

Instead of bringing students into their facilities for work, employers can help students gain similar experience in employment-like settings in schools or the community. Employer involvement with a *school-based enterprises* can make these activities more business-like and help students appreciate the pressures and challenges of management. Employers can also support *service learning* programs, in which students provide needed services in their communities, acquiring especially the important "soft skills" of responsibility, initiative, communication, and problem solving. In time, the development of *computer-based simulation technologies* may also capture some of the realism of work settings and the expertise of employers.

At the Health and Biosciences Academy of Oakland Technical High School, an exemplary high school program for at-risk youths that sends a majority of its graduates to two-and four-year colleges, health employers not only provide work experiences but also are involved in students' academic projects. Each student undertakes a sequence of projects that move from short-term, clearly-defined, school-based projects to longer, more complex and open-ended projects, many of which involve field research in workplaces or community settings. The projects, which draw on the expertise of industry partners as well as teachers at the academy, require teamwork, research and writing, project design and management, and attention to audience. Representatives of local health care employers serve as project advisors and resources and also help assess the presentations and products. Academy teachers depend on employers for expert knowledge and for demonstrating standards of quality expected in business.

Replication of Promising Strategies by National Employers

National employers with networks of local facilities are well positioned to replicate promising programs widely and quickly. McDonald's is testing and replicating a youth apprenticeship model that the company hopes will become a route into management training across the nation. The Ciba Specialty Chemicals Cor-

PORTLAND'S TEACHER INTERNSHIP PROGRAM

In Oregon, the Portland Business-Education Compact, a group of 60 business leaders and educators founded in 1984 to "create better connections between the world of education and the world of work," serves as a broker between employers offering summer internships and interested teachers. Each teacher works in a participating firm and is assigned a business mentor who provides orientation and supervision. The internships typically cost an employer between $2,500 and $5,200 in wages, in return for which the employer receives productive work. There are a large variety of assignments. For example, one teacher helped a television production firm with lighting remote productions and editing, while another implemented Statistical Process Control (SPC) practices in a manufacturing plant.

Upon returning to the classroom, educators find numerous ways to translate their experiences into curricular and pedagogical innovations. Between 60 and 70 percent of participating teachers said they would increase their emphasis on work habits, introduce new technologies to the classroom, and assign projects based on "real-world" problems. As one teacher said, "I've become more aware of [firms'] expectations that employees take charge of their own careers and get additional training so they remain employable and employed. I will make a point of passing this on to my [students]."

Teacher internships can also cement school-business relations. Of the Portland mentors, 41 percent planned to invite the teacher intern's class to their worksite, 38 percent planned to be a guest presenter to the class, and another 16 percent planned to develop a formal partnership with the intern's school.

poration provided seed funding through its educational foundation for the creation and expansion of almost a dozen innovative partnerships between local school systems, postsecondary educational institutions, and manufacturing employers in communities where its facilities are located.

General Motors has created an automotive service technician program that is expanding nationally with the help of other U.S. manufacturers and their dealers. Automotive Youth Education Services (AYES) will help the industry meet its projected need for 60,000 new auto technicians in the next decade. Over 60 schools and 300 dealerships are involved in 1998, twice the 1996 participation levels. Car manufacturers contribute vehicles and technical service information, while dealers offer paid internships and/or part-time work to high school juniors and seniors who take automotive technology classes in school. Upon graduation, qualified students can continue into postsecondary education or work for the dealers, where annual salaries range from $30,000 to $50,000.

Another creative partnership linking national employers and local school districts involved Microsoft, Manpower, and Dell Computers. In 1996, 34 teachers from five school districts were trained both in Microsoft Office applications and in Manpower's quality service training program. Their students created technology-rich projects, which they exhibited publicly. Manpower offered to place both teachers and students in jobs that would further develop their software and workplace skills.

Upgrading and Enriching Ordinary Youth Jobs

About one-third of American high school students—over 2 million teenagers—are employed at any given time during the school year.[11] Youth employers and high schools might turn some of these "naturally occurring" jobs into higher-quality learning experiences. A multi-city pilot project called WorkPlus experi-

mented several years ago with ways to encourage fast food and other youth employers to assess their employees' skills, to help young people with references, resumes, and other job search skills, and to connect them with off-the-job services and supports.[112]

THE CRITICAL ROLE OF INTERMEDIARIES IN FACILITATING EMPLOYER PARTICIPATION

The Strengths of School-to-Career Intermediaries

We believe the most effective means of expanding employer participation in school-to-career reforms is the creation, strengthening, and sustaining of intermediary organizations. Such organizations can manage employer recruitment, reduce administrative burdens on participating employers, and maintain ongoing relationships among schools, employers, students, and the community.[113] These intermediaries are especially important for small and medium-sized firms that have minimal human resource or community relations staff capacity. In addition, they can reduce the coordination burden for participating schools.

The school-to-career efforts that have expanded most rapidly and have integrated school and work experiences most effectively have typically been supported by two distinct employer-oriented bodies. One is a community-wide steering or governance group representing employers, K-12 school systems, higher education, local government, parents, and other community interests. These governing partnerships are essential to consensus-building and are the heart of any long-term community-wide effort to link school and work.

On a day-to-day basis, vibrant school-to-career initiatives are usually guided by a stable, funded intermediary organization that has credibility among both employers and schools. These brokering organizations perform much of the coordination, administration, and recruitment that are too time-consuming for individual employers or schools to undertake on their own. Whether housed in independent nonprofit organizations or, as they sometimes are, in the school district central office, these intermediaries reduce the costs and risks to individual employers by aggregating the interests of firms in the same industry, recruiting new employers, working with young people to place them with interested employers, and providing students and employers with post-placement support. (See box: "The Boston Private Industry Council," page 38.)

In one survey of a national sample of school-to-career programs, employers identified lack of support from school personnel as the most serious barrier to work-based learning and the "unreliability of scheduling student placements" as their most common dissatisfaction.[114] Effective intermediary organizations address these practical concerns.

A review of school-to-career efforts in Boston, Tulsa, and Austin identified several shared characteristics of these communities' strong intermediaries.[115] In each community, an independent organization has taken responsibility for recruiting employers. In Tulsa it is the local chamber of commerce; in Boston, the Private Industry Council; and in Austin, the Capital Area Training Foundation. Each organization:

- Is chartered as a nonprofit corporation that can raise tax-exempt contributions from government and foundations
- Employs full-time staff specifically to work with employers on recruitment and coordination
- Works with existing business networks and associations, especially in trying to reach small and mid-sized firms
- Organizes the participation of employers by grouping them in broad industry clusters, such as health care, finance, travel and tourism, and manufacturing, which enables employers to meet and work with peers and facilitates recruitment of new employers.

Some local intermediaries are independent, freestanding organizations. Others have been associated with PICs, regional workforce boards, or local chapters of national employer organizations. As national groups such as the U.S. Chamber of Commerce, the National Association of Manufacturers, and the National Alliance of Business encourage local chapters to pursue these reforms, these efforts are likely to spread.

Local brokering organizations usually work with firms in a variety of industries. However, employers can also be represented and coordinated by individual industry trade associations, most of which operate at the national and state levels. Most trade associations focus primarily on member services, such as lobbying and public relations, and have had limited involvement in practices of individual firms, including education and training. There are, however, exceptions, as noted in the following examples.

The National Tooling and Machining Association has long made workforce preparation and training an important service to members. The National Retail Federation has launched new efforts to help improve the quality of customer service employees. The Edison Electric Institute and the American Gas Association recently formed the Utility Business Education Coalition (UBEC), which organizes member

THE BOSTON PRIVATE INDUSTRY COUNCIL: CONNECTING EMPLOYERS AND SCHOOLS

For 15 years, the Boston Private Industry Council (PIC) has helped firms and schools work together to improve education and employment. Created in 1979 to promote business involvement in the governance of federal job training programs, the Boston PIC has evolved into a powerful convening and connecting institution.

The PIC was a central party to the 1982 Boston Compact among the city's schools, the business community, local labor unions, and higher education institutions. In this signed compact, the public schools agreed to meet specific goals for increased attendance, academic achievement, and school retention in return for increased opportunities for students and graduates in private-sector jobs and expanded access to local colleges and universities. The PIC helped monitor the agreement and its renegotiation in 1988 and 1994.

In the 1980s, the PIC expanded the city's summer jobs initiative from 300 to 3,000 jobs, enlisting more than 670 employers. Looking to link employer commitments more effectively to high school reform, the PIC took the lead in designing and managing ProTech, an innovative school-to-career program that began in the health industry in 1991 and has since expanded to financial services, utilities, communications, and environmental services. The PIC has also managed the establishment of career academies in three high schools.

Since 1994, the PIC has worked with employers and the public schools to create a system that includes ProTech and the career academies, as well as an annual job-shadowing day involving over 300 employers. The city has designated 10 high schools as "school-to-career schools" with special resources for professional development and employer outreach. The PIC employs a staff of career specialists in the city's high schools who help young people find work and plan their careers. It also coordinates employer recruitment and customer service.

Although the Boston PIC has been a remarkably active and effective intermediary, it still depends significantly on government and foundation resources. Its future will depend on the willingness of firms and the school system to absorb a larger share of operational costs. (For a more detailed examination of employer involvement in Boston's program, see the volume of case studies published separately by CED.)

utilities nationally to join local school-to-career and other business-education partnerships. UBEC has also formed a national partnership with the Southern Regional Education Board (SREB), and the two are collaborating in eastern Pennsylvania to increase employer involvement in SREB's *High Schools That Work* initiative, which attempts to improve student learning at school and at work sites. UBEC and SREB hope that their efforts to build intermediaries will be replicated in other communities where SREB's 650 participating high schools are located.

The costs associated with the convening and connecting activities of local intermediary organizations are significant. As information technology becomes more sophisticated and ubiquitous, some intermediary functions, including information dissemination and labor market analysis, should become easier. However, the connecting role is by nature labor-intensive. Significant public and private resources will be needed to create and sustain these entities.

Federal funds through the School to Work Opportunities Act have helped launch and sustain many intermediaries. For example, Maryland used a portion of its federal school to work grant to create the innovative Employer Incentive Fund, which makes competitive grants to industry groups to create or strengthen employer collaboration models. Grants of up to $100,000 were made in the first year to consortia of industry-specific employers, trade associations, and other brokering organizations.[116]

In anticipation of the end of its five-year federal grant, Massachusetts has taken steps to institutionalize intermediaries. In 1996, the state legislature passed a bill to provide a regular revenue source for connecting activities related to work-based learning programs. The legislation makes partnerships eligible for state funding for intermediary activities in the amount of $0.50 for every $1.00 in student wages paid by local businesses that provide mentoring and workplace learning. In its first year, statewide funding was capped at $500,000. For 1997-98, the authorization was $2.8 million.

Limitations of Financial Incentives

Some observers have proposed that direct financial incentives be used to induce employers to provide work experience to high school students. In Europe, such incentives are frequently embedded in national labor market policies. High minimum wages combined with youth training wages and regulations that make it costly to lay off permanent employees, encourage employers to hire young people and to use work-based learning programs to screen potential permanent hires.[117] While these policies would increase employer interest in recruiting young workers, we believe their positive effects would be swamped by the rigidities they would introduce into U.S. labor markets.

In the United States, corporate income tax credits and wage subsidies have been used to encourage employer participation in training programs. However, there is extensive evidence that tax credits and wage subsidies have little effect on employer decisions and simply create a revenue windfall for participating firms.[118]

While over 90 percent of employers in one survey said that wage subsidies would encourage them to employ more students in school-supervised programs, an overwhelming majority of the same respondents reported that student wages were of little or no importance to their decisions about providing work-based learning opportunities.[119] Either these employers overstated the burden of wages and training costs, or they felt that the likely financial incentive would be insufficient compensation. In either case, financial incentives would be unlikely to alter their decisions. In interviews and surveys, employers are consistent in their desire to avoid government "red tape." Smaller employers in particular are concerned about paperwork and government monitoring related to tax liability. Financial incentives enacted by state and federal legislators have typically been too modest to outweigh these concerns.

Historical experience with employer subsidies for hiring disadvantaged populations reinforces our skepticism. In the Youth Entitle-

ment Demonstrations of the 1970s, even doubling wage subsidies from 50 percent to 100 percent encouraged only modest increases in participation, as employers resisted hiring individuals stigmatized as being less qualified by virtue of their participation in the government training program.[120]

Furthermore, tax credits appear to be a particularly inefficient way to encourage employer involvement. Studies of the federal Targeted Job Tax Credit concluded that employers would have hired as many as 70 percent of the disadvantaged youths for whom they claimed credits had there been no tax incentive.[121] Employment tax credits create a windfall for those who already hire from the target population and have limited power to entice other employers to change their behavior.

In the past few years, more than 15 states have introduced employer wage subsidies and tax credits to partially offset the supervisory, training, and wage costs of student work experience.[122] These policy experiments should be watched closely and assessed for their impacts on employer behavior.

CONCLUSION

The business community has a large stake in the outcome of education reform. It also has unique expertise and resources to contribute. Close and long-term collaborations among high schools, employers, colleges and universities, and other community interests are needed to improve the academic achievement and career preparation of our young people.

To this end, the business community should provide clear and confident political support for both higher academic standards and school-to-career programs, stressing that the two approaches complement each other in the quest for high academic achievement. Employers of all sizes should do what they can to extend work-based learning opportunities to young people. They should also continue to champion high academic standards through both policy efforts and company practices. Finally, the business community should actively support labor market intermediaries that will facilitate and sustain school-to-career programs over the long run.

Chapter IV
Recommendations

In light of our analysis of American secondary education, **CED's overarching recommendation is that the academic standards and school-to-career reform movements should be redefined as elements of a single coordinated strategy to improve education and career outcomes.** The two strategies complement and strengthen each other. More rigorous standards can raise parent, teacher, and student expectations and make it possible to evaluate progress toward high academic goals. School-to-career programs can motivate learning and develop skills that are needed both in the workplace and in higher education. We believe this combination can spark significant improvement in high school performance. Employers at the local, state, and national levels should be strong advocates for integrating these two approaches to reform.

There are more than five million employers in the United States. Only a small fraction of them, who employ about one-quarter of the work force, are large enough to have the internal staff resources and scale economies for sustaining effective, ongoing relationships with schools and to provide a wide variety of high quality, educationally relevant, part-time jobs for students. Large-scale efforts to connect school and work will therefore require effective and sustainable intermediary organizations that simplify employer participation and structure the relationships among schools, employers, and young people.

The focus of this policy statement is on the role of employers. However, effective learning is the mutual responsibility of employers, school leaders, public officials, parents, and others. The primary responsibility rests with our schools to plan and implement improvements, but government can provide incentives and support to expedite promising approaches. We begin with recommendations to employers and then turn to those for schools and government.

THE ROLE OF EMPLOYERS

Support High Academic Achievement Through Policy and Company Practice

Employers can provide important support to schools as they work to raise academic standards. Through their involvement in education policy, employers can encourage further progress in the development of sound standards and assessments. In addition, employers can use their own company practices to reinforce the message to students and parents that academic performance has important consequences.

We recommend that employers continue to help the states develop, refine, and implement rigorous standards for academic performance and content. In previous policy statements, CED has consistently supported rigorous national standards and assessments in a range of academic subjects.[123] Standards can be a powerful lever for reform if they are explicit, linked to assessments of student mastery, and used to hold schools accountable for improvement. However, higher standards are more likely to

be met in schools where administrative and teaching staff have the commitment, resources, and support required to improve instruction.

The states have taken the lead in setting high academic standards. Experience has shown that employers can contribute to these efforts in a number of ways. They can describe and demonstrate the "hard" and "soft" skills required to succeed in modern workplaces. They can help draft and review proposed standards. Employers can also play a major role in building public consensus for high standards, as they have done in Kentucky, Massachusetts, and other states.

CED recommends that state standards incorporate skills valued in the workplace, such as communicating effectively, working productively in teams, and using up-to-date technology. Academic standards are frequently written in ways that ignore these increasingly important and complex "soft skills." We recognize that early efforts to incorporate these skills into academic standards have been problematic, but we believe standards that encourage these competencies and their assessment can and should be developed. The Applied Learning standards for high schools created by the New Standards project provide helpful guidance. Proposed academic standards should also be reviewed to ensure that they are not excessively prescriptive and do not discourage the use of contextual learning.*

We also urge employers and their organizations to support voluntary nationwide educational achievement tests. Although proposals to implement voluntary national testing have been a political lightning rod in Congress, we believe that employment of a few national assessments would help states, schools, students, and parents strive for high academic achievement and monitor progress towards it. We recognize that national tests must be designed carefully, with the primary purpose of assessing progress in basic literacy and numeracy. They should be designed to encourage problem-solving and understanding and not drive classroom learning back to rote memorization.

With respect to company practice, **CED strongly urges employers to use information on student performance, such as that contained in high school transcripts and teacher recommendations, in hiring for summer, school-year, and full-time jobs. We also urge employers to work with schools to make student records more understandable and to develop additional means of documenting student achievement, including certification of skills and portfolios of students' work.** Employers should use their hiring and employment practices to create incentives for students and schools to improve academic performance. **We reaffirm our recommendation in previous CED policy statements that legal obstacles to the consideration of student records by employers should be relaxed, while protecting prospective employees from discrimination.** [12]

CED also recommends that employers—particularly those in industries that rely on youth labor—voluntarily refrain from employing high school students more than 20 hours a week (a workload that appears to interfere with academic performance) and minimize late shifts for students working on school nights. We also urge employers, whenever feasible, to require working students to maintain school attendance and a minimum grade-point average.

Join and Support Intermediary Organizations That Link Employers and Schools

Arranging work opportunities for students and their teachers can be time-consuming and costly, especially for smaller employers. These costs and the risks associated with working with schools and students can be reduced through the efforts of intermediary organizations that are trusted by both schools and employers. These intermediaries and the governing partnerships that guide them convene schools and employers for program planning and evaluation and resolve inevitable tensions between them. They can reduce employer burdens by

*See memorandum by PETER BENOLIEL, (page 54).

preparing young people for work, matching students with work opportunities, and simplifying administrative arrangements.

CED urges employers to become active members of partnerships governing local school-to-career efforts in their communities and to join and use the services of their local intermediaries. We also urge chambers of commerce, trade associations, and other private-sector organizations to support the creation of new intermediaries and the expansion of the activities of existing institutions that employers respect and trust.

Participate in Programs that Use Work Experience to Promote Academic Learning and Career Exploration

CED enthusiastically supports contextual learning through the integration of academic and applied curricula. A coherent sequence of work and community experiences related to academic studies should become part of the core curriculum for high school students. To the extent possible, employers should contribute to these efforts in the following ways:

Employers should try to offer students high quality and varied work experiences to the extent feasible. These experiences range from job shadowing to brief rotations through different departments and more intensive internships and employment. While learning can take place in even the most low-skill, repetitive assignments, we encourage employers to provide opportunities for students to learn new skills and deepen their understanding of adult work settings. Where possible, students should be matched with supportive mentors who provide regular assessment of student performance.

We urge employers who have not yet participated in these programs to do so, and others to increase the number of young people they bring into their workplaces. Employers should actively recruit other firms in their industries and communities and publicize the results of bringing students into their own workplaces.

With respect to the quality of youth jobs, **CED also urges employers in industries that rely on young workers, especially regional or national chains and franchises, to work with schools to enrich the learning content of youth jobs and to integrate work-related lessons into school curricula.** Traditional youth jobs—such as those in fast-food establishments—are where most young people find their first paid work. These jobs typically provide limited learning opportunities, but their potential for learning can in some cases be increased by modest changes in the jobs themselves and/or by connecting the jobs to students' academic programs.

We recognize that there are major obstacles to expanding employer participation in school-to-work programs and that innovative approaches are required to "stretch" employer participation in ways that will extend program benefits of the programs to more students. We therefore suggest the following ways to increase the effectiveness of employer involvement:

Employers can use their expertise and resources to support career-related, experiential learning programs that take place outside the workplace. For work-based learning to become a core component of high school studies, a creative and broad mix of work experiences will be needed. Examples include school-based enterprises and related entrepreneurship programs, community service programs tied to schools, and career-oriented youth organizations such as Junior Achievement. Employers can promote the effectiveness of student experiences through participation in advisory groups and assessments of student work.

We also recommend that employers open their workplaces to teachers and other high school staff for job shadowing, rotations through different departments, and summer internships and jobs. Firms that hesitate to provide work experiences to students may be willing to provide teachers and other school staff with opportunities to learn about the demands and expectations of modern workplaces. These

experiences frequently prompt curricular and instructional innovations.

Employers should partner with local school districts and individual schools to help teachers introduce experiential and contextual learning into the classroom. Employers can make employees and resources available to help students design and undertake such projects and serve as coaches and judges of student presentations. High quality academic learning in school-to-career initiatives requires the integration of workplace experiences into school curricula and instruction. Employers can help teachers bring "real world" standards and learning-by-doing into their classrooms. For example, a growing number of school-to-career programs require students to undertake rigorous, interdisciplinary, academic "field studies," often in teams, which combine research done in and outside of school and culminate in a formal presentation to other students and adults.

In the future, it may be possible to substitute computer simulations of work situations and problems for certain kinds of actual work experience, thereby reducing the burden on employers and making it easier to expand work-based learning programs. **We urge employers to participate in the creation, review, and dissemination of such products for use in high schools and technical colleges.***

THE ROLE OF SCHOOLS

We believe that the following strategies can help schools integrate their pursuit of academic achievement through standards-based reform with the benefits to motivation and experiential learning provided by school-to-career initiatives.

Schools should eliminate rigid distinctions between academic and vocational tracks. They should provide all students with both a rigorous academic foundation and opportunities to apply academic learning in "real-world" work environments. Translating high standards for all students into practice is a formidable undertaking. It will take time for assessments, curricula, teaching practices, and professional development to improve. In the interim, high schools can introduce visible organizational changes that demonstrate to parents, teachers, and employers their commitment to preparing students successfully for colleges or careers. The integration of high-quality academics with vocational instruction is central to both the 1990 Perkins Vocational Education Act and the 1994 School to Work Opportunities Act. We urge schools to implement these reforms. **We also urge high schools to eliminate narrow occupational programs that prepare students only for low-skill jobs or for employment that no longer reflects labor market requirements.**

In previous policy statements, CED has urged expansion of public school choice and publicly-funded charter schools. We believe such institutions can increase educational options and create incentives for public schools to improve their performance.[125] **We reaffirm this recommendation, noting that school-to-career initiatives can benefit from policies that encourage new, non-traditional schools.** School-to-career reforms typically require high schools to change basic features of their operations, including curriculum, staffing, relations with outside partners, and daily schedules. Such changes have often taken root in schools-within-a-school or small learning communities that have purposely relaxed bureaucratic rules to encourage innovation. These initiatives frequently have been part of broader efforts to expand public school choice. In this same context, new charter schools frequently look to school-to-career and contextual learning principles to guide their design.

School officials should encourage the use of contextual learning in high schools. The success of any strategy for improving student performance depends on the skills and motivation of classroom teachers. **We therefore recommend that initial teacher training and in-service professional development place greater emphasis on contextual instruction and work-based learning. We also urge schools to provide professional development certification for**

*See memorandum by JOHN DIEBOLD, (page 55).

work internships and study and release time for workplace experience. In addition, we recommend more accessible alternative routes to teacher certification, which will allow a broader and more diverse set of individuals to pursue second careers in teaching.

CED recommends the employment of "job developers" or "career-coaches" in high schools and urges that these positions be institutionalized through predictable annual funding. Most high schools provide limited career counseling and have minimal infrastructure for connecting young people with employment and work experience. However, some high schools have hired "job developers" or "career coaches" who work with both students and employers to facilitate job matching and to provide support and case management for students' work placements. In some cases the positions are funded by the local intermediary organization, with staff housed within the school.

CED strongly encourages high schools and colleges to collaborate in facilitating the transition from high school to college. Although the focus of this policy statement is the relationship between high schools and employers, institutions of higher education should also be engaged in school-to-career reforms. Two-year colleges are specified in the School to Work Opportunities Act as important partners in these efforts. TechPrep programs that link high school and community college occupational programs are beginning to provide ladders to postsecondary learning and to improve pedagogy in both secondary and postsecondary institutions. Links with postsecondary institutions include formal agreements that coordinate high school technical programs and related curricula in community colleges, counseling on college applications and financial aid forms, arrangements that enable high school students to take college courses, and granting of college credit for qualifying high school work experiences.

College-entrance requirements that put undue emphasis on specific courses and exams can put at a disadvantage those who take nontraditional routes in high school. Flexible admissions policies that recognize acquired competence can encourage high school experimentation with work-based learning, interdisciplinary curricula, and assessments based on portfolios or work and other evidence of achievement.

We urge two- and four-year colleges to join school reform governance partnerships and assess the ways in which their admissions and other policies can encourage improvements in high school learning. In this context, we also urge four-year state colleges and universities to complement traditional course-based admission requirements with new competency-based measures. Oregon, Wisconsin, and other states have responded to the growth of charter schools, school-to-career initiatives, and other innovative high school programs with new competency-based admissions policies.[126]

THE ROLE OF GOVERNMENT

The ultimate test of the effectiveness of school-to-career programs will be whether employers, schools—and students—see sufficient benefits to invest their own time, energy, and resources. However, in certain areas public policies are needed to provide critical support for the start-up, expansion, and institutionalization of employer-school partnerships.

In previous policy statements, CED has called for government to promote wider economic opportunity, particularly through investments in human capital.[127] We believe that public investments that encourage employers and schools to participate in school-to-career initiatives are consistent with that call. We suggest the following public policies:

Employer participation in school-to-career programs can be greatly facilitated by intermediary organizations that "broker" employer-school relationships. For many small employers such intermediaries are essential. **These organizations may be developed and funded entirely by employers. However, in many cases public funds may be needed to support such activities, and CED supports such public fund-**

ing. We believe public support for intermediaries is justified because individual employers will usually invest too little in school-to-career training and the organization of intermediaries. This is because individual employers receive very little of the higher lifetime productivity of the young people they train, and organization and free-rider problems impede collaboration with other employers. However, once these intermediary institutions are in place and serving a significant proportion of local employers, obstacles to private support are likely to diminish.

Governments should use incentive grants and competitions to stimulate the creation and growth of these intermediaries. We do not recommend expanding tax incentives or wage subsidies to attract employers, believing that direct support for intermediaries is a more effective use of public resources. However, we do recommend careful evaluation of existing state financial incentives of this kind to gain a better understanding of their effects.

We urge government to encourage experimentation with intermediaries that serve out of school/out of work populations as well as high school students and that serve adults as well as youths. Students are not the only group that needs help in connecting with employers; high school dropouts and the unemployed also would benefit from assistance by local intermediaries. Moreover, as the pressure increases on communities and their employers to hire and support former welfare recipients, it will prove more efficient to house employment services to multiple client groups within the same organization. We advocate thoughtful experimentation with intermediary models that serve both students and out-of-school, harder-to-employ populations.

We believe that continued public support for school-to-career reforms is justified by a public interest in their benefits for education and workforce preparation. However, we recognize that the School to Work Opportunities Act is likely to sunset, as planned, in 2001. **CED therefore urges states to provide such support. We also recommend that the federal government incorporate the central features of school-to-career programs into its guidelines for funding mainstream education, training, and youth programs, such as Title I, vocational education, and the Job Training Partnership Act or its successor**. Legislation and regulatory guidelines for programs that combine workplace experiences with classroom studies should emphasize high academic standards, encourage experiential learning, and create strong and stable partnerships among schools, employers, and postsecondary institutions. **We also recommend that governments make it easier to pool resources from different funding sources for initiatives that combine school and work**.

State and federal laws regarding child labor, workers' compensation, and insurance did not contemplate programs linking school and work. These laws sometimes contain unnecessary obstacles to employer participation. **CED recommends that state and federal governments reassess their child labor, workers' compensation, and other workplace-related laws and regulations with the objective of removing unnecessary obstacles to work-based learning for students**. We believe this can be done without compromising health and safety protections or exposing employers to unnecessary risk. Child labor laws should encourage employment tied to school learning programs and discourage excessive hours for high school students.*

CED recommends that the Office of Educational Research and Information and other research organizations support additional research on program effectiveness and costs and disseminate information on best practices in design and implementation. Too little is known about the long-term effects on students' education, employment, and incomes of different models for linking school and work. This lack of longitudinal data inhibits improvements in design and implementation. There is relatively little research on the assessments of program costs and benefits by different types of employers, for instance those related by industry, size,

*See memorandum by CHARLES LEE, (page 55).

hiring practices, or geographic location. There is even less research on the effectiveness of different types of intermediaries. Research should be undertaken through a public-private initiative to which national foundations contribute leadership and funding.

We also urge federal, state, and local governments, in their capacity as employers, to provide work experience and jobs for students and teachers. Local, state, and federal governments are large employers. In many communities, governments have been slow to open their own workplaces to young people in school-based learning programs. The public sector can provide a positive example for other employers and expand the opportunities available to students, as the federal government is now beginning to do in the welfare-to-work arena.

Finally, CED urges the President, governors, and other political leaders to champion the integration of high academic standards and school-to-career learning. Some governors have delivered clear and consistent messages about their states' commitment to young people and their futures. Others should join them. Their message should emphasize that stronger connections between school and the world of work will benefit students, employers, states and communities, and our nation.

CONCLUSION

As the American economy enters the twenty-first century, a strong back and a good work ethic are insufficient to secure a job that pays a middle-class wage. Those with only a high school diploma or less have not shared the fruits of the economic changes that have benefited so many Americans. This is neither fair to these individuals nor productive for the nation. The most effective—indeed, perhaps the only—solution to this problem is to raise the academic achievement and skill development of the young people who are now being left behind. Only then will *all* high school graduates be adequately prepared to choose their future occupational paths, whether those paths involve higher education, immediate entry into a career, or a combination of work and learning.

This task is daunting. Schools need help. Employers around the country have shown that they can contribute significantly in partnership with schools and local communities. Over time, a uniquely American system of quality education can evolve, based on high academic standards for all, closer links between school and work, and preparation of all students for productive social and economic futures.

Building this system will take time, patience, leadership, and creative collaborations. We believe that our nation's economic progress and its social cohesion depend upon the success of this effort. The policies recommended in this statement will advance this critical agenda.

Appendix:

School-to-Career Resources List

ACHIEVE
1280 Massachusetts Avenue
Cambridge, MA 02138
617-496-6300

American Federation of Teachers
555 New Jersey Avenue, NW
Washington, DC 20001-2029
202-393-6373

Automotive Youth Educational Services
General Motors
Mail Code 482-102-218
3044 W. Grand Boulevard
Detroit, MI 48202
313-556-9368

Boston Private Industry Council
2 Oliver Street, 7th Floor
Boston, MA 02109
617-423-3755

Business/Industry/Education Alliance
University of Delaware
305C Willard Hall
Newark, DE 19716
302-831-3101

Business Roundtable
1615 L Street, NW
Suite 1100
Washington, DC 20036
202-872-1260

Capital Area Training Foundation
800 Brazos Street
P.O. Box 2026
Austin, TX 78701
512-474-2710

Jobs for the Future
1 Bowdoin Square
Boston, MA 02117
617-742-5995

High Schools That Work
Southern Regional Education Board
592 10th Street, NW
Atlanta, GA 30318-5790
404-875-9211

National Alliance of Business
1201 New York Avenue
Washington, DC 20005
202-289-2888

National Association of Manufacturers
1331 Pennsylvania Avenue, NW
Suite 600 North Tower
Washington, DC 20004
202-637-3000

National Association of Partners in Education
901 North Pitt Street
Suite 320
Alexandria, VA 22314
703-836-4880

National Association of Private Industry Councils
1201 New York Avenue
Washington, DC 20005
202-289-2950

National Employer Leadership Council
1001 Connecticut Avenue
Suite 310
Washington, DC 20036
202-822-8027

National Retail Federation
325 7th Street, NW
Suite 1000
Washington, DC 20004
202-783-7971

National School-to-Work Office
400 Virginia Avenue, SW
Suite 210
Washington, DC 20024
202-401-6222

Portland Business Education Compact
5825 NE Ray Circle
Hillsboro, OR 97124
503-614-1637

Tulsa Chamber of Commerce
616 South Boston
Suite 100
Tulsa, OK 74119
918-560-0241

United States Chamber of Commerce
1615 H Street
Washington, DC 20062
202-659-6000

Utility Business Education Coalition
1035 Sterling Road
Suite 203-A
Herndon, VA 20170-3838
703-455-6676

Endnotes

1. Committee for Economic Development. *American Workers and Economic Change.* (New York, NY: Committee for Economic Development, 1996).

2. See the following Committee for Economic Development policy statements: *Investing in Our Children: Business and the Public Schools* (1985), *Children in Need: Investment Strategies for the Educationally Disadvantaged* (1987), *The Unfinished Agenda: A New Vision for Child Development and Education* (1991), and *Why Child Care Matters* (1994).

3. Lauren Resnick. *Education and Learning to Think.* (Washington, DC: National Academy Press, 1987). p. 7.

4. The term "school-to-career" is used in this statement in place of "school-to-work." This is a conscious decision and reflects the evolution of usage in the field. For many, "school-to-work" has negative connotations. It is seen as misleading because it implies a one-time transition to employment and because it conjures an association with entry-level jobs rather than progress toward a career that can support a middle-class standard of living.

5. "School-to-Work and Goals 2000," *The Phyllis Schlafly Report,* April 1997. Emphasis in the original.

6. Stephen Hamilton, *Apprenticeship for Adulthood.* (New York: The Free Press, 1990).

7. Pepper Culpepper, and David Feingold, eds., *The German Skills Machine* (Berghanen Books, 1998)

8. The *Fortune* 1000 employed 26.3 million people in 1997. CED private communication with *Fortune.*

9. Paul Osterman and Maria Iannozzi. *Youth Apprenticeships and School-to-Work Transition: Current Knowledge and Legislative Strategy.* (Philadelphia: University of Pennsylvania, National Center on the Educational Quality of the Workforce, 1993), p. 4; Robert. Lerman "Building Hope, Skills and Careers: Making a U.S. Youth Apprenticeship System," in Hochschild, Jennifer, Irwin Garfinkel, and Sara McLanahan, eds. *Social Policies for Children.* (Washington, DC: Brookings Institution, 1996).

10. Bureau of Labor Statistics. U.S. Department of Labor. *Work and Family: Turning Thirty: Job Mobility and Labor Market Attachment.* Report 862. (Washington, DC: Bureau of Labor Statistics, 1993).

11. Jacob Klerman and Lynn Karoly. *The Transition to Stable Employment: The Experience of U.S. Youth in their Early Labor Market Career.* (Berkeley: National Center for Research in Vocational Education, 1995), pp. 7-8. High school dropouts are a crucial exception to this pattern. They appear less and less able to form stable connections to the labor market.

12. Rosella Gardecki and David Neumark. *Order from Chaos? The Effects of Early Labor Market Experiences on Adult Labor Market Outcomes.* Working Paper 5899. (Cambridge: National Bureau of Economic Research, 1997), pp. 20-21; David Neumark, "Youth Labor Markets in the U.S.: Shopping Around versus Staying Put," unpublished manuscript, July, 1997.

13. Peter Cappelli et al. *Change at Work.* (New York: Oxford University Press, 1997). Chapter 1.

14. Henry S. Farber, "The Changing Face of Job Loss," *Brookings Papers on Economic Activity: Microeconomics 1997.*

15. CED calculations using *Current Population Survey.*

16. Klerman and Karoly, *The Transition to Stable Employment: The Experience of U.S. Youth in Their Early Labor Market Career.*

17. Claudia Goldin, and Robert Margo, "The Great Compression: The Wage Structure in the United States at Mid-Century," *Quarterly Journal of Economics* (February 1992):1-34.

18. CED calculations using Current Population Survey.

19. U.S. Department of Labor, Bureau of Labor Statistics, private communication.

20. U.S. Department of Labor, Bureau of Labor Statistics.

21. See Richard B. Freeman and James L. Medoff, *What Do Unions Do?* (New York: Basic Books, 1984).

22. George J. Borjas, Richard B. Freeman, and Lawrence F. Katz, "How Much Do Immigration and Trade Affect Labor Market Outcomes?" *Brookings Papers on Economic Activity* 1(1997):1-67.

23. Richard J. Murnane and Frank Levy, *Teaching the New Basic Skills* (New York: The Free Press, 1996), pp. 31-32.

24. See Paul Osterman. "How Common Is Workplace Transformation and Who Adopts It?" *Industrial and Labor Relations Review* 47, no. 2 (January 1994):173; also, Lawrence Mishel, "Comment: Skill Requirements and the Workforce," *Urban Labor Markets and Job Opportunity,* ed. George E. Peterson and Wayne Vroman (Washington, D.C.: The Urban Institute Press, 1992), pp. 67-76. Some analysts assert that the shift to more demanding forms of work organization is incremental and slow and has primarily created a gap between the skills employers *need* and skill levels they would *like* from new employees. In this view, employers think they need more and higher skill levels than in fact they do, given their current work organization and use of technology. See Cathleen Stasz, *The Economic Imperative Behind School Reform: A Review of the*

Literature (Berkeley, Calif.: National Center for Research in Vocational Education, 1996).

25. Osterman, "How Common Is Workplace Transformation and Who Adopts It?"; also, personal communication from the author to CED concerning 1997 survey findings.

26. Harry Holzer, *What Employers Want: Job Prospects for Less-Educated Workers* (New York: Russell Sage, 1996), p. 69.

27. Holzer, *What Employers Want: Job Prospects for Less-Educated Workers*, p. 127

28. National Center on the Educational Quality of the Workforce, *First Findings from the EQW National Employer Survey* (Philadelphia: University of Pennsylvania, 1995).

29. Philip Moss and Chris Tilly, *Raised Hurdles for Black Men: Evidence from Employer Interviews* (Lowell, Mass.: University of Massachusetts at Lowell, 1995).

30. Harris Education Research Center, *An Assessment of American Education: The Views of Employers, Higher Educators, the Public, Recent Students, and Their Parents* (New York: Committee for Economic Development, 1991).

31. National Alliance of Business and Scholastic, Inc. *Education in the U.S.* (Washington, D.C.: NAB and Scholastic, Inc. 1995).

32. Quoted in John T. Bruer, *Schools for Thought: A Science of Learning in the Classroom* (Cambridge, Mass.: MIT Press, 1993), p. 6.

33. Committee for Economic Development. *Connecting Inner-City Youth to the World of Work.* (New York, NY: Committee for Economic Development, 1996). p. 2.

34. Nelson Smith, *Standards Mean Business* (Washington, D.C.: National Alliance of Business, 1996), p. 6.

35. Presentation by Donna Klein, Director of Work Life Programs, Marriott Corporation, to the National Governors Association Workforce Development Policy Forum, Cleveland, Ohio, November 21, 1996.

36. Ellen Galinsky and Dana F. Friedman, *Education Before School: Investing in Quality Child Care* (New York: Scholastic, Inc., 1993), pp. 66-67.

37. Smith, *Standards Mean Business*, p. 7.

38. David W. Breneman, "Remediation in Higher Education: Its Extent and Cost," in *Brookings Papers on Education Policy*, ed. Diane Ravitch (Washington, D.C.: Brookings, 1998), pp. 359-370.

39. Richard Freeman, "Why Do So Many Young American Men Commit Crimes and What Might We Do About It?" *Journal of Economic Perspectives* 10, no. 1 (Winter 1996): 25-42.

40. W. Norton Grubb, *Learning to Work: The Case for Reintegrating Job Training and Education* (New York: Russell Sage, 1966), Chapter 5.

41. Richard Kazis and Hilary Kopp, *Both Sides Now: New Directions in Promoting Work and Learning for Disadvantaged Youth* (Boston: Jobs for the Future, 1997); Pines, *A Generation of Challenge: Toward a Policy for Out-of-School and Out-of-Work Youth.*

42. Marshall S. Smith and Jennifer O'Day, "Systemic School Reform," in *Politics of Education Association Yearbook*, (New York: Taylor and Francis, 1990), p. 238.

43. Student teacher ratios fell from 26:1 in 1960 to 17:1 in 1964. Department of Education, National Center for Education Statistics, *Digest of Education Statistics 1995*, pp. 74, 165.

44. Diane Ravitch, *National Standards in American Education: A Citizen's Guide*, (Washington, D.C.: Brookings Institution Press, 1995).

45. Smith, and O'Day. "Systemic School Reform," pp. 233-267.

46. The standards-setting strategy has three components: *content standards* for academic subjects, which provide broad descriptions of what students should know and be able to do at broadly defined grade levels; *performance standards* that provide guidance to teachers and students on what constitutes a demonstration of proficiency in the required knowledge and skills; and *resource standards* that describe the teacher development requirements and other resources needed to ensure that every student has the opportunity to learn in ways that can meet higher academic standards.

47. Peter Galusza, "Kentucky's Class Act," *Business Week*, 7 April 1997, pp. 90-92.

48. Roger Pankratz, *Summary of the Effects of School Reform in Kentucky Supported by Research* (Frankfort: Kentucky Institute for Education Research, 1997).

49. *Changing Schools in Louisville.* 1:1. Winter 1996/97. (Atlanta: The Focused Reporting Project, 1997).

50. *"Quality Counts,"* supplement of *Education Week*, 22 January 1997.

51. *Changing Schools in Louisville*, p. 3.

52. American Federation of Teachers, *Reaching the Next Step: How School to Career Can Help Students Reach High Academic Standards and Prepare for Good Jobs* (Washington, D.C.: American Federation of Teachers, 1997).

53. Laurence Steinberg, B. Bradford Brown, and Sanford M. Dornbusch, *Beyond the Classroom: Why School Reform Has Failed and What Parents Need to Do* (New York: Simon and Schuster, 1996), p. 13.

54. Laurence Steinberg, "Standards Outside the Classroom." *Brookings Papers on Education Policy 1998* (Washington, D.C.: Brookings Institution Press, 1998) pp. 323-24.

55. There are positive returns to academic achievement in high school. However, these rewards do not tend to materialize until young people have been in the labor force for several years. According to one study, for students who do not attend college, mastery of basic mathematics correlates with higher wages six years after high school (age 24) compared with peers with weaker math skills. See Richard J. Murnane and Frank Levy, *Teaching the New Basic Skills* (New York: The Free Press, 1996), pp. 42-46.

56. Adria Steinberg, *Real Learning, Real Work: School-to-Work as High School Reform*, (New York: Routledge, 1997), p. 16.

57. Martin Haberman, "Unemployment Training: The Ideology of Nonwork Learned in Urban Schools," *Phi Delta Kappan* (March 1997):499-503.

58. Sue E. Berryman, "Apprenticeship as a Paradigm of Learning" in, *Education Through Occupations in American High Schools*, vol. 1, ed. W. Norton Grubb (New York: Teachers College Press, 1995). pp. 192-214.

59. Lauren Resnick, "Presidential Address: Learning in School and Out." *Educational Researcher* 16 (1987):13-20.

60. Dale Parnell, *The Neglected Majority* (Washington, D.C.: The Community College Press, 1985); William T. Grant Foundation Commission on Work, Family, and Citizenship, *The Forgotten Half: Non-College Youth in America: An Interim Report on the School-to-Work Transition*, (Washington, D.C.: William T. Grant Commission, 1988); Commission on Skills of the American Workforce, *America's Choice: High Skills or Low Wages!* (Rochester, N.Y.: National Center on Education and the Economy, 1990).

61. Kathleen Cushman, Adria Steinberg and Rob Riordan, *Connecting School and Work as a Means to Whole-School Change* (Providence, R.I.: The Coalition of Essential Schools, 1997), pp. 10-13.

62. David Stern, et al., *School-Based Enterprise: Productive Learning in American High Schools* (San Francisco: Jossey-Bass, 1994).

63. Jobs for the Future, *Jobs for the Future's Benchmark Communities Initiative*, (Boston: Jobs for the Future, 1997).

64. Gary Walker, "Out of School and Unemployed: Principles for More Effective Policies and Programs," in *A Generation of Challenge: Toward a Policy for Out-of-School and Out-of-Work Youth*, ed. Marion Pines (Baltimore, Md.: Sar Levitan Center for Policy Studies of Johns Hopkins University, 1997). pp.73-85.

65. Howard Gardner, *The Unschooled Mind: How Children Think and How Schools Should Teach* (New York: Basic Books, 1991), p. 122.

66. These student anecdotes are from Steinberg, Adria. *Real Learning, Real Work: School-to-Work as High School Reform.* (New York: Routledge, 1997).

67. U.S. Department of Labor, *Evaluating the Net Impact of School to Work: Proceedings of a Roundtable* (Washington, D.C.: U.S. Department of Labor, 1997).

68. Thomas G. Sticht, W. B. Armstrong, D. T. Hicky, and J. S. Caylor, *Cast-off Youth: Policy and Training Methods from the Military Experience* (New York: Praeger, 1987).

69. U.S. Department of Labor, *Evaluating the Net Impact of School to Work: Proceedings of a Roundtable.*

70. George Cave, Hans Bo, Fred Doolittle, and Cyril Toussaint, *JobStart: Final Report on a Program for School Drop-Outs* (New York: Manpower Demonstration Research Corporation, 1993).

71. Thomas Smith, and Michelle Gambone, "Effectiveness of Federally Funded Employment Training Strategies for Youth," in U.S. Department of Labor, *Dilemmas in Youth Employment Programming: Findings from the Youth Research and Technical Assistance Project* (Washington, D.C.: U.S. Department of Labor, 1992), pp. 36-37.

72. Laurence Steinberg, B. Bradford Brown and Sanford Dornbusch, *Beyond the Classroom: Why School Reform Has Failed and What Parents Need to Do* (New York: Simon and Schuster, 1996).

73. U.S. Department of Labor, Office of the Chief Economist, *What's Working (and What's Not): A Summary of Research on the Economic Impacts of Employment and Training Programs.* (Washington, D.C.: U.S. Department of Labor, 1995); American Youth Policy Forum, *Some Things Do Make a Difference for Youth: A Compendium of Evaluations of Youth Programs and Practices* (Washington, D.C.: American Youth Policy Forum, 1997.

74. Smith and Gambone. "Effectiveness of Federally Funded Employment Training Strategies for Youth," p. 35. These studies make comparisons among young people with no substantial postsecondary education, all of whom are likely to have lower earnings than college graduates.

75. Andrew Sum, Neeta Fogg, and Neal Fogg, "Confronting the Demographic Challenge: Future Labor Market Prospects of Out-of-School Adults," in Pines, *A Generation of Challenge: Toward a Policy for Out-of-School and Out-of-Work Youth*, pp. 40-41.

76. David Stern, et al., "Work Experience for Students in High School and College." *Youth and Society* 21, no. 3 (1990):355-389.

77. David Stern and Y. Nakata, "Characteristics of High School Students' Paid Jobs, and Employment Experience After Graduation," in *Adolescence and Work: Influences of Social Structure, Labor Markets, and Culture*, ed. David Stern and D. Eichorn (Hillsdale, N.J.: Erlbaum, 1989). This study could suffer from selection bias. Young people who can find jobs that make better use of their skills might also be able to find better jobs after high school, independent of skills they developed while working

78. Stern et al., "Work Experience for Students in High School and College," *Youth and Society.*

79. Lynn Olson, *The School-to-Work Revolution: How Employers and Educators Are Joining Forces to Prepare Tomorrow's Skilled Workforce* (Reading, M.A.: Addison Wesley, 1997).

80. U.S. Congress, Office of Technology Assessment, *Learning to Work, Making the Transition from School-to-Work*, OTA-EHR-637 (Washington, D.C.: U.S. Government Printing Office, 1995). Each of these findings is supported by two or more studies of several programs. Only the findings concerning employment outcomes varied substantially among the studies.

81. Edward Pauly, Hilary Kopp, and Joshua Haimson, *Home-Grown Lessons: Innovative Programs Linking Work and School* (San Francisco: Jossey-Bass, 1995).

82. Robert Crain, et al., *Effectiveness of New York City's Career Magnet Schools: An Evaluation of Ninth Grade Performance Using an Experimental Design* (Berkeley, Calif.: National Center for Research on Vocational Education, 1992).

83. Gene Bottoms and Pat Mikos, *Seven Most Improved* High Schools That Work *Sites Raise Achievement in Reading, Mathematics, and Science* (Atlanta, Ga.: Southern Regional Education Board, 1995).

84. Charles Dayton, Alan Weisberg and David Stern, *California Partnership Academies, 1987-88 Evaluation Report* (Berkeley, Calif.: Policy Analysis for California Education, University of California, 1989).

85. David Stern, et al., "Benefits and Costs of Dropout Prevention in a High School Program Combining Academic and Vocational Education: Third-Year Results from Replications of the California Peninsula Academies," *Education Evaluation and Policy Analysis.* 11, no. 4 (1989): 405-416.

86. Hilary Kopp, Richard Kazis, and Andrew Churchill, *Promising Practices: A Study of Ten School-to-Career Programs.*

87. Crain, et al., *Effectiveness of New York City's Career Magnet Schools: An Evaluation of Ninth Grade Performance Using an Experimental Design.*

88. Alan Hershey et al., *Partners in Progress: Early Steps in Creating School-to-Work Systems* (Princeton, N.J.: Mathematica Policy Research, Inc., 1997).

89. Committee for Economic Development. *Investing in our Children: Business and the Public Schools.*

90. Business Roundtable, *A Business Leader's Guide to Setting Academic Standards* (Washington, D.C.: Business Roundtable, 1996), pp. 10-11.

91. Maris A. Vinovskis, "An Analysis of the Concept and Uses of Systemic Educational Reform," *American Educational Research Journal* 33, no. 1 (Spring 1996):66.

92. James C. Dick, *Business/Education Partnerships: What We're Learning* (West Covina, Calif.: California Educational Research Cooperative, 1996), pp. 1-2.

93. National Employer Leadership Council, *The Employer Participation Model* (Washington, D.C.: National Employer Leadership Council, 1996).

94. The Equal Employment Advisory Council has prepared a discussion of the legal issues related to the use of school records in hiring decisions. The paper concludes that "the issues of what minimum qualifications and educational standards an employer may require of its entry level workforce, and what legitimate business concerns are sufficient justification for practices that may have a disproportionate effect on groups protected by Title VII, may ultimately require a legislative or regulatory solution." See Equal Employment Advisory Council, *An Employer's Guide to Using School Transcripts in Hiring Decisions* (Washington, D.C.: Equal Employment Advisory Council, 1997), p. 37.

95. Southern Regional Education Board, "Employers and Schools Working Together to Improve Student Achievement," *Business and Education* (Atlanta, Ga.: Southern Regional Education Board, 1996), pp. 10-11.

96. Business Coalition for Education Reform. *Making Academics Count: How Employers Can Motivate Students to Work Hard in School.* (Washington DC: Business Coalition for Education Reform, 1996).

97. National Alliance of Business et al., *School-to-Career Initiatives: The Business View* (Washington, D.C.: National Alliance of Business, 1997).

98. Calculations by CED based on national survey in Alan Hershey et al., *Partners in Progress: Early Steps in Creating School-to-Work Systems* (Princeton, N.J.: Mathematica Policy Research, 1997).

99. Robert Zemsky. *What Employers Want: Employer Perspectives on Youth, the Labor Market, and Prospects for a National System of Youth Apprenticeships.* (Philadelphia: National Center on the Educational Quality of the Workforce, 1994). p. 8.

100. Richard Kazis and Susan Goldberger. "The Role of Employers: The Integration of Work-Based Learning." In W. Norton Grubb, ed. *Education Through Occupations in American High Schools* (Vol. 2). (New York: Teachers College Press, 1995). p. 188.

101. Robert Zemsky, *What Employers Want: Employer Perspectives on Youth, the Labor Market, and Prospects for a National System of Youth Apprenticeships* (Philadelphia: National Center on the Educational Quality of the Workforce, 1994), p. 8.

102. Katherine L. Hughes, *Employer Participation in School-to-Work Programs: Helping to Train Our Future Workforce*

(New York: Institute on Education and the Economy, 1997), pp. 4-5; see also Basil Whiting and Wade Sayer, *School-to-Work or School-to-What? Exploring Prospects for Building Employer Capacity in School-to-Work Programming*, (Philadelphia: Public/Private Ventures, 1995).

103. Lynn Olson, *The School-to-Work Revolution: How Employers and Educators Are Joining Forces to Prepare Tomorrow's Skilled Workforce* (Reading, Mass.: Addison Wesley, 1997), p. 94.

104. Anthony Alongi, "Boston: Making Work-Based Learning A Core Component of Systemic Reform" (paper prepared for CED project on the Employer's Role in Linking School and Work, Boston, Jobs for the Future, 1997).

105. Hilary Kopp and Richard Kazis. *Promising Practices.* (Boston: Jobs for the Future, 1995). p. 41; also informal communication with Cambridge school system.

106. Basil Whiting, *Philadelphia: Integrating School-to-Career with the "Children Achieving" Agenda.* Draft paper prepared for CED Project on the Employer's Role in Linking School and Work. (Boston: Jobs for the Future, 1997).

107. U.S. Congress, Office of Technology Assessment, *Learning to Work, Making the Transition from School to Work* (Washington, D.C.: U.S. Government Printing Office, 1995), p. 76.

108. Edward Pauly, Hilary Kopp, and Joshua Haimson, *Home-Grown Lessons: Innovative Programs Linking Work and School.* (San Francisco: Jossey-Bass, 1995), p. 122; Irene Lynn and Joan Wills, *School Lessons, Work Lessons* (Washington, D.C.: Institute for Educational Leadership, 1994).

109. Paul Osterman, "Involving Employers in School-to-Work Programs," in *Learning to Work: Employer Involvement in School-to-Work Transition Programs*, ed. Thomas Bailey (Washington, D.C.: Brookings Institution, 1995), pp. 75-76.

110. A 1997 employer survey administered by the U.S. Bureau of the Census found that one in four employers nationally are involved in school-to-work initiatives involving high schools and/or community college students and that 91 percent of these are providing internships, job shadowing, mentoring, or apprenticeships to students. The survey was administered to over 7,000 private-sector employers with 20 or more employees. See Institute for Research on Higher Education, *Bringing School-to-Work to Scale: What Employers Report* (Philadelphia: IRHE, University of Pennsylvania, 1997).

111. Laurence Steinberg, "Standards Outside the Classroom" (paper for Brookings Institution conference on the State of Student Performance in American Schools, May 29-30, 1997), pp. 22-23.

112. Keith MacAllum and Patricia Ma. *Skill, Standards and Entry-Level Work: Elements of a Strategy for Youth Employability Development* (Washington, D.C.: U.S. Department of Labor, 1995), pp. 47-48.

113. Kazis and Kopp, *Promising Practices: A Study of Ten School-to-Career Programs*, pp. 89-94.

114. U.S. Congress, Office of Technology Assessment, *Learning to Work, Making the Transition from School to Work*, p. 96.

115. Lynn Olson, *The School-to-Work Revolution: How Employers and Educators Are Joining Forces to Prepare Tomorrow's Skilled Workforce.* pp. 149-186.

116. Andrew Sum et al., *A Generation of Challenge: Pathways to Success for Urban Youth* (Baltimore, Md.: Sar Levitan Center for Social Policy Studies, Johns Hopkins University, 1997), p. 135.

117. Paul Osterman, "Involving Employers in School-to-Work Programs," pp. 80-81.

118. U.S. Congress, Office of Technology Assessment, *Learning to Work, Making the Transition from School to Work*, pp. 90-93.

119. U.S. Congress, Office of Technology Assessment, *Learning to Work, Making the Transition from School to Work*, p. 91.

120. W.C. Ball et all, "Participation of Private Business as Work Sponsors in Youth Entitlement Demonstrations," (New York: MDRC, 1981).

121. U.S. Congress, Office of Technology Assessment, *Learning to Work, Making the Transition from School to Work*, pp. 90-91.

122. National Governors Association, *State School-to-Work System Development-1996* (Washington, D.C.: National Governors Association, 1996), pp. 3-4.

123. *Putting Learning First*, p. 37

124. *Connecting Inner-City Youth to the World of Work*, p. 24.

125. *Putting Learning First*, p. 17.

126. David T. Conley, and Christine A. Tell, "Admission Standards: Content and Process Areas, Proficiency and Indicators," Eugene, Oregon, Oregon System of Higher Education, 1996. Larry Rubin, "The Development of New Approaches to College Preparation and Admission in Wisconsin, "*Responding to School Reform*, Education Commission of the States.

127. *American Workers and Economic Change*, p. 10.

Memoranda of Comment, Reservation, or Dissent

Page 1, ROBERT B. CATELL, with which JOHN DIEBOLD has asked to be associated

The CED does not go far enough in helping employers to recognize their role in education BEFORE the high school level.

It is understood that the primary focus of the Statement is high school, but the CED recognizes that "high school is already too late for some young people."

It is important to point out that many habits concerning a work ethic, study habits, or tendency to be at risk of "dropping out" are formed as early as the elementary level. Employers can and should partner with the education community to develop and implement strategies for early intervention which can lay the ground work for future success at the high school level. It is important for employers to recognize that they do have a role in linking school and work even at the elementary and middle school levels.

Pages 3, PETER BENOLIEL

Does not this sentence and the accompanying note strongly suggest that "Career" be substituted for "Work" in the title?

Pages 4 and 42, PETER BENOLIEL

I could not agree more with the recommendation to "promote rigorous academic content and performance standards," but take exception to the notion that "These should encompass other skills needed in the workplace, such as communicating with others, using technology, and working in teams." These skills are best developed through rigorous academic preparation (reading, writing, science studies) supplemented by the socialization process that starts early in life. The difficulties alluded to in incorporating "soft skills" are real, and only compromise needed focus on rigorous academic preparation.

Page 15, JOHN DIEBOLD

Implementation of the recommendations in this paper will be occurring against the background of a third important educational reform—the growing number of market-oriented educational efforts—from voucher programs to charter schools and including both for-profit and not-for-profit initiatives.

This development presents an enhanced opportunity for action supportive of the programs advocated in this paper. It is in the interest of the operators of these market-oriented schools to implement many of our recommendations. Business in areas served by market-oriented schools should help such local schools by pointing out to the community leaders and parents the job enhancement opportunities the business programs provide.

Page 17, PETER BENOLIEL

The role of parental involvement is an important factor in high school just as in the early grades, as cited on p.2.

Page 44, JOHN DIEBOLD

When it comes to adopting innovations of the kind recommended throughout this paper, it is important to structure such programs in a way that they rely on a demand pull rather than a supply push (of, for example, technology).

A demand pull, such as that emanating from market-oriented schools, can make a big difference. The educational establishment has a long history of being very slow to adopt many new ideas and procedures. Trying to change curriculum and teaching methods can be a little like pushing a string, thus making it difficult to implement recommendations of the kind we are proposing unless a demand pull is made an integral part of such programs.

Page 46, CHARLES LEE, with which JOHN DIEBOLD has asked to be associated

I am concerned that such a recommendation, if misinterpreted or taken out of context, could compromise the credibility of the overall statement. I respectfully submit the following comment for publication as a footnote to the above referenced recommendation:

"That in removing unnecessary obstacles to work-based learning for students, we do not negate or diminish the protection of individuals, conditions or work practices for which these laws and regulations were originally intended."

FUNDERS

We wish to give special thanks to the following foundations and companies whose generous support made this policy statement possible.

Aetna Foundation, Inc.
Ameritech
Carnegie Corporation of New York
The Chase Manhattan Foundation
The Commonwealth Fund
GE Fund
IBM Corporation
The Pew Charitable Trusts
Safeguard Scientifics Foundation
SHRM Foundation
The Travelers Foundation
William T. Grant Foundation

A number of recent CED policy statements contributed significantly to *The Employer's Role in Linking School and Work*. These include:

American Workers and Economic Change (1996)

Connecting Inner-City Youth to the World of Work (1996)

Rebuilding Inner-City Communities: A New Approach to the Nation's Urban Crisis (1995)

Connecting Students to a Changing World: A Technology Strategy for Improving Mathematics and Science Education (1995)

Putting Learning First: Governing and Managing the Schools for High Achievement (1994)

The Unfinished Agenda: A New Vision for Child Development and Education (1991)

An America that Works: The Life-Cycle Approach to a Competitive Work Force (1990)

Children in Need: Investment Strategies for the Educationally Disadvantaged (1987)

Investing in Our Children: Business and the Public Schools (1985)

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